State of California
The Resources Agency
Department of Water Resources

FISCAL IMPACTS

FINAL

R-19

Oroville Facilities Relicensing
FERC Project No. 2100

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REPORT SUMMARY

This document presents the results of the Relicensing Study R-19 – *Fiscal Impacts*, one of two socioeconomic studies conducted to support the Oroville Facilities Relicensing (Federal Energy Regulatory Commission [FERC] Project No. 2100). The California Department of Water Resources (DWR) commissioned this study as part of the relicensing process for the preparation of a license application to be submitted to FERC for the Oroville Facilities.

As part of the relicensing process, a series of related studies is being conducted to gather information on project-related recreation activities associated with the Oroville Facilities. This report presents the results of one of those studies: to estimate existing and projected future fiscal impacts of Project-related recreation activity and operation and maintenance (O&M) expenditures on local governments in Butte County. This report was prepared under the general direction of DWR staff. Opinions, findings, and conclusions expressed in this report are those of the authors. This report does not express the official position of DWR unless specifically approved by the Director or his designee.

INTRODUCTION

This *Fiscal Impacts* study focuses on characterizing existing fiscal conditions, estimating current local public revenues and costs associated with recreation and O&M of the Oroville Facilities, and projecting future changes in revenues and costs resulting from changes in recreation use and spending caused by projected growth in visitation to the Oroville Facilities. Fiscal conditions are evaluated for six jurisdictions: the Cities of Oroville, Paradise, Gridley, Biggs, and Chico, and the County of Butte. Conditions and effects on other jurisdictions and special districts, other than the Feather River Recreation and Parks District (FRRPD), are not evaluated because fiscal effects of relicensing on these agencies would be minimal.

NEED FOR THIS STUDY

DWR is currently in the process of renewing its license for the Oroville Facilities. FERC is responsible for granting the license and requires the applicant, DWR, to assess various resources, including recreation and socioeconomic resources. This study complies with FERC direction for preparing socioeconomic exhibits. Specifically, FERC guidelines direct that a socioeconomic assessment should include a “local government fiscal impact analysis.” Because this study focuses on local fiscal impacts of recreation activity and O&M at the Oroville Facilities, the study also will help DWR meet FERC’s direction regarding preparation of a comprehensive recreation plan.

STUDY OBJECTIVES

The primary objective of the *Fiscal Impacts* study is to estimate the effects of economic activity generated by current and projected recreation use and by the O&M of the Oroville Facilities on sales tax revenues, lodging tax revenues, and other tax revenues of local governments, and on local public service costs related to Project-related recreation activity and O&M of the Oroville Facilities. A secondary objective of the study is to gain a better understanding of the relationship between the level of recreation activity at the Oroville Facilities and resulting levels of public revenues and costs generated for local agencies. This understanding establishes an analytical framework for evaluating effective recreation development strategies for potentially enhancing fiscal conditions for local government.

METHODOLOGY

Public cost and revenue effects were estimated based on information gathered through interviews with service providers, budget data for each affected jurisdiction, current tax rates, visitation data for the Oroville Facilities, and population data.

The general approach to assessing the fiscal effects of current and future recreation activity and O&M expenditures associated with the Oroville Facilities was to focus the analysis on the costs, revenues, and jurisdictions most affected by these activities and expenditures. The approach was developed in coordination with a Socioeconomics Technical Review Team for Oroville Facilities Relicensing. From a local government perspective, the largest fiscal impacts related to the Oroville Facilities result directly from providing services to recreation visitors to Lake Oroville and related recreational sites and facilities. For this analysis, these effects are referred to as visitor-driven effects. Indirect fiscal effects on local governments also result from the economic growth and subsequent employment and population growth spurred by recreation activity and related spending and by O&M expenditures. These effects are referred to as indirect (growth-related) impacts.

To determine the jurisdictional focus of the analysis, recreation use data from the recreation user survey conducted for the Relicensing Study R-13 – *Recreation Surveys* was evaluated to determine where most of the recreation visitor activity, including recreation use and spending, occurs within Butte County. As expected, the data showed that most activity takes place in the Oroville area. Only a small portion of the activity occurs in the incorporated communities of Biggs, Chico, Gridley, and Paradise. More emphasis, therefore, was placed on assessing fiscal impacts on the City of Oroville, and in unincorporated Butte County where the facilities are located, than on the other jurisdictions.

Fiscal impacts were evaluated using fiscal models developed specifically for this study and these six jurisdictions. The fiscal impact assessment models are components of the Economic-Fiscal Model, which consists of four community-level models that are linked in a County-level inter-community spreadsheet model with capabilities to estimate

the economic and fiscal effects of recreation, construction, and O&M activity at the Oroville Facilities. The four community areas modeled were Oroville, Paradise, Biggs/Gridley, and Chico. Together, these four community areas, which include lands within the incorporated area and surrounding lands in the unincorporated area, comprise all of the land area of Butte County. The fiscal models were designed to estimate fiscal effects in the incorporated and unincorporated jurisdictions in each community modeling area.

STUDY RESULTS AND DISCUSSION

Local fiscal effects primarily result from recreation activity and O&M of the Oroville Facilities. As recreation-related spending levels vary in relation to use, local tax revenues generated by miscellaneous retail sales, hotel and motel stays, fuel purchases, and other expenditures by visitors to the Oroville Facilities also change. Similarly, changes in visitation to the Oroville Facilities also generate increased demand for law enforcement, fire protection, and other governmental services, such as road maintenance. Other Project-related fiscal effects, such as enhanced property values resulting from flood protection provided by the Project, are not evaluated.

Effects of Current Recreation Activity and O&M Expenditures

Existing recreation and O&M activities related to the Oroville Facilities result in differing fiscal impacts on local government in Butte County. For the County of Butte, non-residents of unincorporated Butte County who recreated at the Oroville Facilities in FY 2002-03 directly generated an estimated $369,900 in public services expenditures and $220,400 in revenues, resulting in an annual deficit to the County of an estimated $149,500 (Table RS-1). This deficit represents 0.1 percent of the County's FY 2002-03 general fund budget and less than 0.1 percent of the County's overall budget. Indirect costs attributable to the population supported by visitor spending and related economic activity exceeded revenues by an estimated $240,100. O&M activities generated an additional deficit estimated at $114,200 (Table RS-2).

Taken together, the total deficit ($503,800) resulting from recreation (direct and indirect) and O&M activities represents 0.4 percent of the County's FY 2002-03 general fund budget and 0.2 percent of the County's overall budget. This estimated deficit, however, likely overstates the actual deficit for the County because intergovernmental revenues associated with the population supported by visitor spending and O&M of the Oroville Facilities are underestimated in the analysis.

For the City of Oroville, non-resident visitors directly incurred an estimated $207,900 in public services expenditures and generated $531,900 in revenues in FY 2002-03, resulting in a surplus of $324,000 (Table RS-1). Indirect costs to the City of Oroville exceeded revenues by an estimated $167,800. O&M activities result in an estimated deficit of $86,800 annually for the City of Oroville (Table RS-2). The net surplus ($69,400) to the City of Oroville resulting from both existing recreation (direct and

Table RS-1. Summary of estimated current visitor-driven fiscal impacts on the County of Butte and Butte County cities of recreation at the Oroville Facilities.

Jurisdiction	Revenues ($1,000)	Expenditures ($1,000)	Net Visitor-Driven Fiscal Impact ($1,000)
County of Butte	$220.4	$369.9	-$149.5
Oroville	$531.9	$207.9	$324.0
Paradise	$24.3	$21.8	$2.3
Gridley	$19.9	$8.3	$11.6
Biggs	$0.4	$0.8	-$0.4
Chico	$44.8	$61.9	-$17.1

Table RS-2. Summary of estimated current fiscal impacts on the County of Butte and Butte County cities of O&M of the Oroville Facilities.

Jurisdiction	Revenues ($1,000)	Expenditures ($1,000)	Net O&M Fiscal Impact ($1,000)
County of Butte	$331.1	$447.3	-$114.2
Oroville	$111.5	$198.3	-$86.8
Paradise	$17.4	$27.2	-$9.8
Gridley	$2.7	$8.3	-$5.6
Biggs	$0.4	$0.7	-$0.3
Chico	$27.5	$51.7	-$24.2

indirect) and O&M activities, which represents approximately 0.9% of Oroville's FY 2002-03 general fund budget, understates the actual surplus because of likely higher revenues from intergovernmental transfers.

For Biggs, Chico, Gridley, and Paradise, visitor-driven effects are relatively minor, with public services expenditures in FY 2002-03 ranging from an estimated $800 for Biggs to $61,900 for Chico, and revenues ranging from $400 for Biggs to $44,800 for Chico (Table RS-1). Similar to Butte County and the City of Oroville, the net fiscal impact of O&M of the Oroville Facilities is negative for Biggs, Chico, Gridley, and Paradise (Table RS-2). The overall net fiscal impacts on Biggs, Chico, Gridley, and Paradise are uncertain because indirect (growth-related) expenditure and revenue effects were not evaluated.

For the FRRPD, service and program costs for the population generated by visitor and O&M expenditures are estimated to exceed revenues by $25,000.

Effects of Projected Future Recreation Activity

For the County of Butte, the fiscal impact analysis reveals that public service expenditures generated by projected recreation activity at the Oroville Facilities in 2020 would exceed revenues, directly resulting in an annual deficit projected at $189,600. Indirect costs of providing public services to the population supported by visitor spending also are projected to exceed revenues by $303,200. For the City of Oroville, visitor-driven revenues are projected to exceed costs by $409,200. Indirect costs to the

City of Oroville, however, are projected to exceed revenues by $212,000. Fiscal effects on the Cities of Biggs, Chico, Gridley, and Paradise are estimated to be relatively small under projected future (2020) conditions.

Under projected future (2020) conditions, the population supported by visitor spending and subsequent economic activity generated by the spending would create an increased demand for services from the FRRPD. This increased service area population is projected to result in an annual deficit of $21,200 to the FRRPD in 2020.

CONCLUSIONS

Effects of Current Recreation Activity and O&M Expenditures

The *Fiscal Impact* analysis indicates that current recreation activity and O&M of the Oroville Facilities generates an annual deficit for the County of Butte and an annual surplus for the City of Oroville. This outcome is largely a result of differences in sales for the two jurisdictions of taxable goods and services to visitors of the Oroville Facilities. Most of the retail businesses and motels near the Oroville Facilities are located in Oroville, allowing the City to capture a large percentage of total visitor sales. This, in turn, generates substantial sales and lodging tax revenues for the City of Oroville, which the County of Butte does not receive. Visitor-driven sales and lodging tax revenues generated by recreation activity at the Oroville Facilities are estimated to be almost two-and-a-half times larger for the City of Oroville than for the County of Butte. Conversely, public services costs are estimated to be higher for Butte County than for the City of Oroville.

For both jurisdictions, the resident population indirectly attributable to visitor spending and O&M activities is estimated to generate public services costs greater than public revenues. This may be explained by the generally accepted notion in California that, in a fiscal sense, residential development does not pay for itself; commercial and industrial development is usually needed to provide revenues to offset the costs of serving the resident population. The fiscal models do not account for all of the beneficial fiscal effects that may be secondarily related to the population supported by visitor and O&M spending. The model results may, therefore, present a somewhat unbalanced view of indirect effects, overstating the indirect deficit resulting from visitor and O&M activities. Additionally, partially funded State mandates for providing certain services and programs to the population indirectly attributable to visitor and O&M spending adds to the overall deficit, particularly for the County. For O&M activities, deficits are exacerbated because O&M spending generates relatively small amounts of sales tax revenue for Butte County and the City of Oroville.

It should be noted that the fiscal impact assessment models for the City of Oroville and Butte County hold State and Federal revenues constant for most intergovernmental transfers. This modeling constraint likely results in the model understating revenue transfers attributable to the portion of the County population indirectly supported by recreation visitor (and O&M) spending. Sensitivity analysis conducted to evaluate this

potential modeling limitation found that allowing only 5 percent of Federal revenue transfers and 20 percent of State revenue transfers to be population sensitive would balance the indirect effects of the use and O&M of the Oroville Facilities.

For Biggs, Chico, Gridley, and Paradise, the visitor-driven fiscal effects of existing activities are predicted to be small, and no substantial beneficial or adverse fiscal effects appear to be caused by existing recreation use or O&M activities related to the Oroville Facilities.

For the FRRPD, the estimated $25,000 deficit generated by indirect (growth-related) effects probably reflects the reality facing the District that much of its current operation is being funded by State funds and carryover funds. Additionally, charges for programs and services provided by the District do not fully offset the costs of these programs and services.

Effects of Projected Future Recreation Activity

For the County of Butte, the fiscal impact analysis reveals that public service expenditures generated by projected future recreation activity at the Oroville Facilities in 2020 would exceed revenues. The projected deficit would be 26 percent larger than the estimated deficit under current conditions. Under projected future conditions, the overall annual fiscal impact on the City of Oroville of recreation activity at the Oroville Facilities is projected to be beneficial, with the surplus projected to be about 26 percent larger than under current use conditions. These changes in fiscal conditions to Butte County and the City of Oroville, as compared to current conditions, reflect the corresponding change in recreation activity at the Oroville Facilities projected for 2020. The fiscal effects on the Cities of Biggs, Chico, Gridley, and Paradise of projected future use of the Oroville Facilities in 2020 are estimated to be larger than under current conditions but would still be relatively minor.

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

af	acre-feet
Caltrans	California Department of Transportation
CCD	census county division
CDF	California Department of Forestry and Fire Protection
cfs	cubic feet per second
DFG	California Department of Fish and Game
DWR	California Department of Water Resources
DUA	Day Use Area
FERC	Federal Energy Regulatory Commission
FRRPD	Feather River Recreation and Park District
FRSA	Feather River Service Area
FY	fiscal year
I-O	input-output
ISO	Independent System Operator
LOSRA	Lake Oroville State Recreation Area
maf	million acre-feet
msl	mean sea level
MW	megawatts
NOAA	National Oceanic and Atmospheric Administration
O&M	operations and maintenance
OWA	Oroville Wildlife Area
PRPD	Paradise Recreation and Park District
RM	River Mile
SWP	State Water Project
TOT	transient occupancy tax
USACE	U.S. Army Corps of Engineers

1.0 INTRODUCTION

A fiscal study typically characterizes existing fiscal conditions and quantifies changes in costs and revenues for public jurisdictions (e.g., counties and cities) associated with an action that alters a jurisdiction's tax base or cost structure. The purpose of this fiscal study is to determine how existing and projected recreation use associated with the Oroville Facilities and operations and maintenance (O&M) of the Oroville Facilities affect the flow of costs and revenues to local governments in Butte County. Furthermore, the study provides an analytical tool (or model) for evaluating potential resource actions identified through the relicensing process and for developing strategies to potentially enhance fiscal conditions in the study region.

Following this Introduction, which includes relevant background information, identifies the study area, and describes the Oroville Facilities, the study report details the methodology used to develop the fiscal impact model and describes results from using the model to assess the fiscal impacts of existing and projected future (year 2020) recreation activity at the Oroville Facilities and current O&M of the Oroville Facilities. These analyses serve as "baseline" conditions for subsequently evaluating resource actions that would change levels of recreation activity at the Oroville Facilities or O&M requirements of the Oroville Facilities.

In addition to these study elements, the report includes a Conclusions section, followed by references cited in the methodology description. Appendix A includes a detailed description of the structure of the fiscal impact model, including key inputs, outputs, and data sources used to develop the spreadsheet models. An electronic version of the spreadsheet model will be available once the study report process is completed. Although this report does not include a glossary of terms, one is available on the California Department of Water Resources' (DWR) website.

1.1 BACKGROUND INFORMATION

DWR, guided by the Oroville Facilities Relicensing Collaborative, commissioned this study as part of the relicensing process for the preparation of a license application to be submitted to the Federal Energy Regulatory Commission (FERC) for the Oroville Facilities (FERC Project No. 2100). As part of the relicensing process, a series of related studies are being conducted to assess and evaluate recreation and socioeconomic resources associated with the Oroville Facilities. This report addresses the study objectives identified in Study Plan R-19, *Fiscal Impacts*.

1.1.1 Study Area

Fiscal effects associated with recreation and O&M-related activity associated with the Oroville Facilities are evaluated at the city and County level. The study area includes communities in close proximity to the Oroville Facilities, including the cities of Oroville, Paradise, Gridley, Biggs, and Chico, as well as the unincorporated (Countywide) area of Butte County (Figure 1.1-1). The incorporated and unincorporated areas are part of four modeling areas that include all of the land area of Butte County. The study area

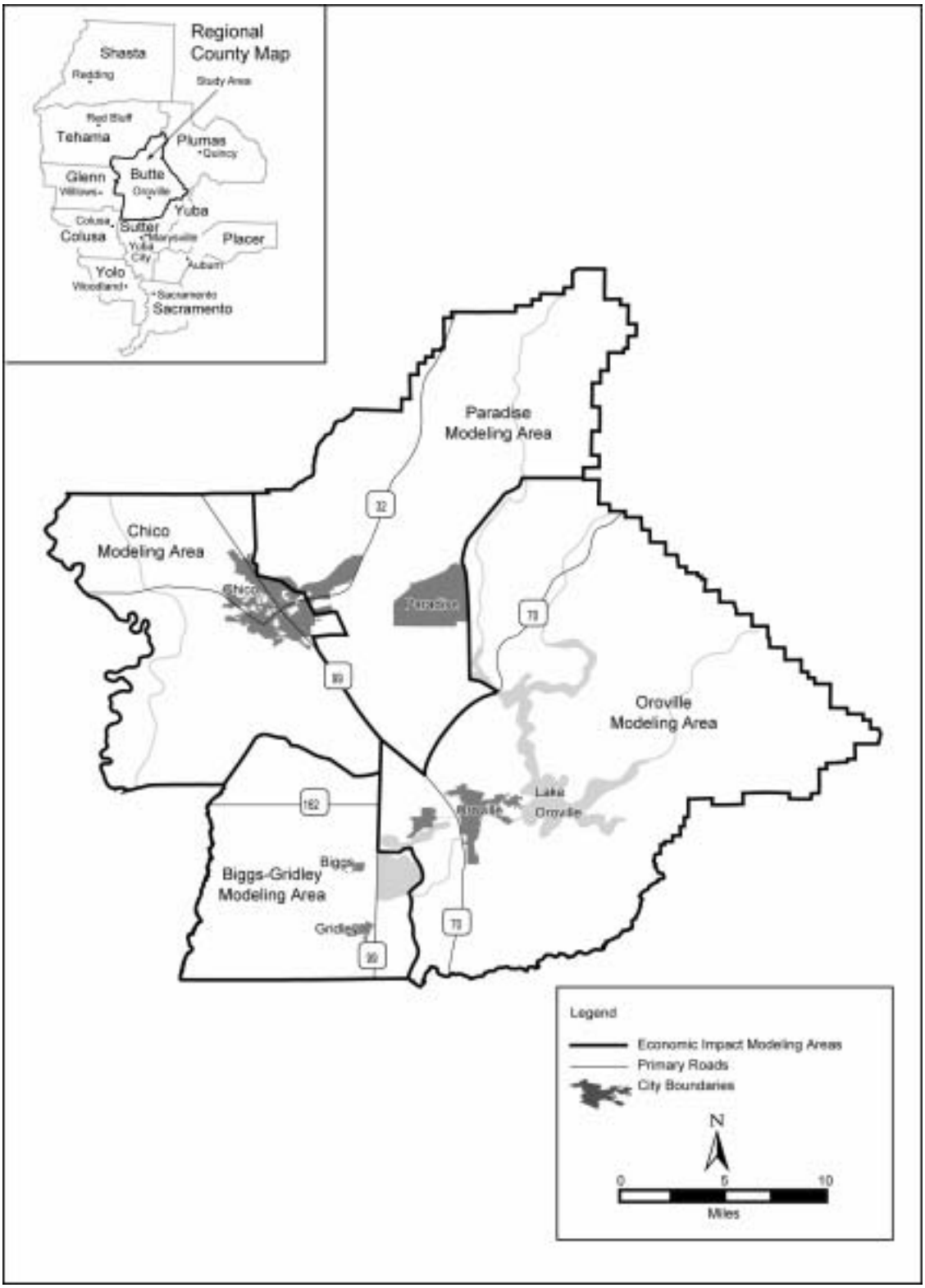

Figure 1.1-1. Fiscal impact study area.

extends beyond the boundary of the FERC Oroville Relicensing Project to capture the fiscal effects that result largely from persons recreating at the Oroville Facilities and by operations and maintenance-related activity in nearby communities.

Fiscal effects resulting from recreation and O&M-related activity may also be felt in other nearby communities. These effects, however, are believed to be minimal and do not warrant a rigorous assessment of public revenues and costs. Similarly, the fiscal conditions of most special districts are not affected by recreation-related use of the Oroville Facilities because they do not provide public services to Oroville Facilities visitors. The exception is the Feather River Recreation and Park District (FRRPD), serving both incorporated and unincorporated areas within or near the Oroville Facilities that may experience increases in use related to populations supported by visitor activities in the District. Cost effects on this District are evaluated as part of the study.

1.2 DESCRIPTION OF FACILITIES

The Oroville Facilities were developed as part of the State Water Project (SWP), a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The main purpose of the SWP is to store and distribute water to supplement the needs of urban and agricultural water users in Northern California, the San Francisco Bay area, the San Joaquin Valley, and Southern California. The Oroville Facilities are also operated for flood control and power generation, to improve water quality in the Delta, enhance fish and wildlife, and provide recreation.

FERC Project No. 2100 encompasses 41,100 acres and includes Oroville Dam and Reservoir, three power plants (Hyatt Pumping-Generating Plant, Thermalito Diversion Dam Power Plant, and Thermalito Pumping-Generating Plant), Thermalito Diversion Dam, the Feather River Fish Hatchery and Fish Barrier Dam, Thermalito Power Canal, Oroville Wildlife Area (OWA), Thermalito Forebay and Forebay Dam, Thermalito Afterbay and Afterbay Dam, transmission lines, and a relatively large number of recreational facilities. An overview of these facilities is provided in Figure 1.2-1. Oroville Dam, along with two small saddle dams, impounds Lake Oroville, a 3.5-million-acre-foot (maf) capacity storage reservoir with a surface area of 15,810 acres at its maximum normal operating level of 900 feet above mean sea level (msl).

The hydroelectric facilities have a combined licensed generating capacity of approximately 762 megawatts (MW). The Hyatt Pumping-Generating Plant is the largest of the three power plants with a capacity of 645 MW. Water from the six-unit underground power plant (three conventional generating and three pumping-generating units) is discharged through two tunnels into the Feather River just downstream of Oroville Dam. The plant has a generating and pumping flow capacity of 16,950 cubic feet per second (cfs) and 5,610 cfs, respectively. Other generation facilities include the

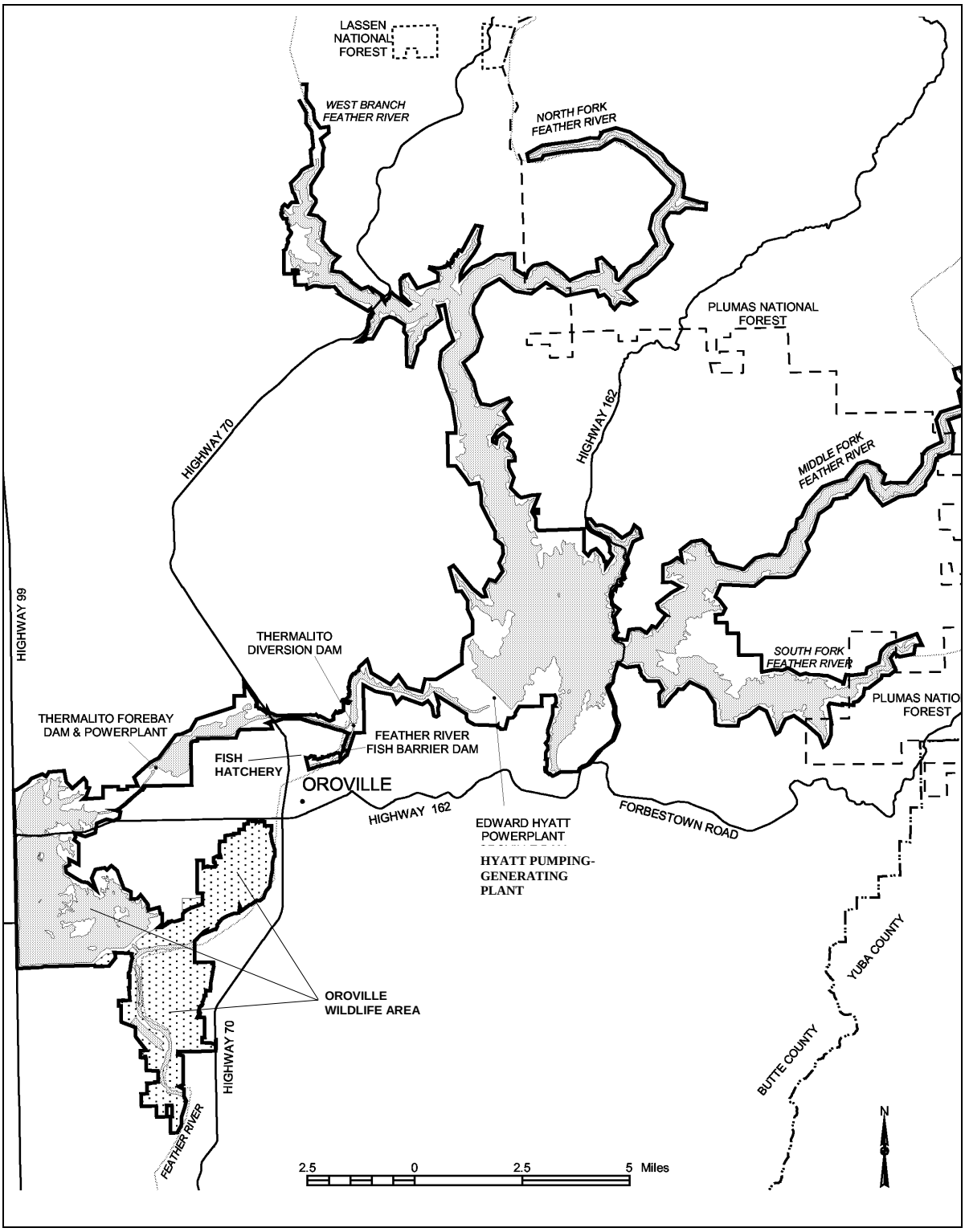

Figure 1.2-1. Oroville Facilities FERC Project 2100 boundary.

3-MW Thermalito Diversion Dam Power Plant and the 114-MW Thermalito Pumping-Generating Plant.

Thermalito Diversion Dam, 4 miles downstream of the Oroville Dam, creates a tail water pool for the Hyatt Pumping-Generating Plant and is used to divert water into the Thermalito Power Canal. Thermalito Diversion Dam Powerplant is a 3-MW power plant located on the left abutment of the diversion dam and releases a maximum of 615 cfs of water into the river.

The Thermalito Power Canal is a 10,000-foot-long channel designed to convey generating flows of 16,900 cfs to the Thermalito Forebay and pump-back flows to the Hyatt Pumping-Generating Plant. Thermalito Forebay is an off-stream regulating reservoir for the Thermalito Pumping-Generating Plant. The Thermalito Pumping-Generating Plant is designed to operate in tandem with the Hyatt Pumping-Generating Plant and has generating and pump-back flow capacities of 17,400 cfs and 9,120 cfs, respectively. When in generating mode, the Thermalito Pumping-Generating Plant discharges into Thermalito Afterbay, which is contained by a 42,000-foot-long earthfill dam. The Afterbay is used to release water into the Feather River downstream of the Oroville Facilities, and helps regulate the power system, provides storage for pump-back operations, provides recreational opportunities, and provides local irrigation water. Several local irrigation districts receive Lake Oroville water via the Afterbay.

The Fish Barrier Dam is downstream of the Thermalito Diversion Dam and immediately upstream of the Feather River Fish Hatchery. The flow over the dam maintains fish habitat in the lowflow channel of the Feather River between the dam and the Thermalito Afterbay outlet, and provides attraction flow for the hatchery. The hatchery is an anadromous fish hatchery intended to compensate for salmon and steelhead spawning grounds made unreachable by construction of Oroville Dam. Hatchery facilities have a production capacity of 10 million fall-run salmon, 5 million spring-run salmon, and 450,000 steelhead annually (pers. comm., Kastner 2003). However, diseases have occasionally reduced hatchery production in recent years.

The Oroville Facilities support a variety of recreational opportunities. These opportunities include boating (several types), fishing (several types), fully developed and primitive camping (including boat-in and floating sites), picnicking, swimming, horseback riding, hiking, off-road bicycle riding, wildlife watching, and hunting. There are also visitor information sites with cultural and informational displays about the developed facilities and the natural environment. There are major recreation facilities at Loafer Creek, Bidwell Canyon, Spillway, Lime Saddle, and Thermalito Forebay. Lake Oroville has two full-service marinas, five car-top boat ramps, 10 floating campsites, and seven two-stall floating toilets. There are also recreation facilities at the Lake Oroville Visitors Center, Thermalito Afterbay, and OWA.

The OWA comprises approximately 11,000 acres west of Oroville that is managed for wildlife habitat and recreational activities. It includes Thermalito Afterbay and surrounding lands (approximately 6,000 acres) along with 5,000 acres adjoining the

Feather River. The 5,000-acre area is adjacent to or straddles 12 miles of the Feather River, and includes willow- and cottonwood-lined ponds, islands, and channels. Recreation areas include dispersed recreation (hunting, fishing, and bird watching), plus recreation at developed sites, including the Monument Hill Day Use Area (DUA), model airplane grounds, three boat ramps on the afterbay and two on the river, and two primitive camping areas. The California Department of Fish and Game's (DFG) habitat enhancement program includes a wood duck nest-box program and dry-land farming for nesting cover and improved wildlife forage. Limited gravel extraction also occurs in a few locations.

1.3 CURRENT OPERATIONAL CONSTRAINTS

Operation of the Oroville Facilities varies seasonally, weekly, and hourly, depending on hydrology and the objectives that DWR is trying to meet. Typically, releases to the Feather River are managed to conserve water while meeting a variety of water delivery requirements, including flow, temperature, fisheries, diversion, and water quality. Lake Oroville stores winter and spring runoff for release to the Feather River as necessary for project purposes. Meeting the water supply objectives of the SWP has always been the primary consideration for determining Oroville Facilities operation (within the regulatory constraints specified for flood control, instream fisheries, and downstream uses). Power production is scheduled within the boundaries specified by the water operations criteria noted above. Annual operations planning is conducted for multi-year carryover storage. The current methodology is to retain half of the Lake Oroville storage above a specific level for subsequent years. Currently, that level has been established at 1.0 maf; however, this does not limit drawdown of the reservoir below that level. If hydrology is drier or requirements greater than expected, additional water could be released from Lake Oroville. The operations plan is updated regularly to reflect forecast changes in hydrology and downstream operations. Typically, Lake Oroville is filled to its maximum operating level of 900 feet above msl in June and then lowered as necessary to meet downstream requirements, to a minimum level in December or January (approximately 700 msl). During drier years, the reservoir may be drawn down more and may not fill to desired levels the following spring. Project operations are directly constrained by downstream operational demands and flood management criteria as described below.

1.3.1 Downstream Operation

An August 1983 agreement between DWR and DFG entitled *Agreement Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish & Wildlife* (DWR and DFG 1983) sets criteria and objectives for flow and temperatures in the low-flow channel and the reach of the Feather River between Thermalito Afterbay and Verona. This agreement: (1) establishes minimum flows between the Thermalito Afterbay outlet and Verona that vary by water year type; (2) requires flow changes under 2,500 cfs to be reduced by no more than 200 cfs during any 24-hour period (except for flood management, failures, etc.); (3) requires flow stability during the peak of the fall-run Chinook salmon spawning season; and (4) sets an objective of suitable

temperature conditions during the fall months for salmon and during the spring/summer for shad and striped bass.

1.3.1.1 Instream Flow Requirements

The Oroville Facilities are operated to meet minimum flows in the lower Feather River as established by the 1983 agreement (see above). The agreement specifies that the Oroville Facilities release a minimum of 600 cfs into the Feather River from the Thermalito Diversion Dam for fisheries purposes. This is the total volume of flows from the diversion dam outlet, the diversion dam power plant, and the Feather River Fish Hatchery pipeline.

Generally, the instream flow requirements below Thermalito Afterbay are 1,700 cfs from October through March, and 1,000 cfs from April through September. However, if runoff for the previous April–July period is less than 1,942,000 acre-feet (af) (i.e., the 1911–1960 mean unimpaired runoff near Oroville), the minimum flow can be reduced to 1,200 cfs from October to February, and 1,000 cfs for March. A maximum flow of 2,500 cfs is not exceeded from October 15 through November 30 to prevent spawning in overbank areas that might become de-watered.

1.3.1.2 Temperature Requirements

The Diversion Pool provides the water supply for the Feather River Fish Hatchery. The hatchery temperature objectives are 52°F for September, 51°F for October and November, 55°F for December through March, 51°F for April through May 15, 55°F for last half of May, 56°F for June 1–15, 60°F for June 16–August 15, and 58°F for August 16–31. In April through November, a temperature range of plus or minus 4°F is allowed for objectives.

There are several temperature objectives for the Feather River downstream of the Thermalito Afterbay outlet. During the fall months, after September 15, the temperatures must be suitable for fall-run Chinook salmon. From May through August, the temperatures must be suitable for shad, striped bass, and other fish.

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) has also established an explicit criterion for steelhead trout and spring-run Chinook salmon, memorialized in a biological opinion on the effects of the Central Valley Project and SWP on Central Valley spring-run Chinook and steelhead. As a reasonable and prudent measure, DWR attempts to control water temperature at Feather River Mile (RM) 61.6 (Robinson's Riffle in the low-flow channel) from June 1 through September 30. This measure attempts to maintain water temperatures less than or equal to 65°F on a daily average. The requirement is not intended to preclude pump-back operations at the Oroville Facilities needed to assist the State of California with supplying energy during periods when the California Independent System Operator (ISO) anticipates a Stage 2 or higher alert.

The hatchery and river water temperature objectives sometimes conflict with temperatures desired by agricultural diverters. Under existing agreements, DWR

provides water for the Feather River Service Area contractors. The contractors claim a need for warmer water during spring and summer for rice germination and growth (i.e., minimum 65°F from approximately April through mid-May, and minimum 59°F during the remainder of the growing season), though there is no explicit obligation for DWR to meet the rice water temperature goals. However, to the extent practical, DWR does use its operational flexibility to accommodate the Feather River Service Area contractors' temperature goals.

1.3.1.3 Water Diversions

Monthly irrigation diversions of up to 190,000 af (July 2002) are made from the Thermalito Complex during the May–August irrigation season. The total annual entitlement of the Butte and Sutter County agricultural users is approximately 1.0 maf. After these local demands are met, flows into the lower Feather River (and outside of the Project 2100 boundary) continue into the Sacramento River and into the Sacramento-San Joaquin Delta. In the northwestern portion of the Delta, water is pumped into the North Bay Aqueduct. In the south Delta, water is diverted into Clifton Court Forebay where the water is stored until it is pumped into the California Aqueduct.

1.3.1.4 Water Quality

Flows through the Delta are maintained to meet Bay-Delta water quality standards arising from DWR's water rights permits. These standards are designed to meet several water quality objectives such as salinity, Delta outflow, river flows, and export limits. The purpose of these objectives is to attain the highest reasonable water quality, considering all demands being made on the Bay-Delta waters. In particular, they protect a wide range of fish and wildlife including Chinook salmon, Delta smelt, striped bass, and the habitat of estuarine-dependent species.

1.3.2 Flood Management

The Oroville Facilities are an integral component of the flood management system for the Sacramento Valley. During the wintertime, the Oroville Facilities are operated under flood control requirements specified by the U.S. Army Corps of Engineers (USACE). Under these requirements, Lake Oroville is operated to maintain up to 750,000 af of storage space to allow for the capture of significant inflows. Flood control releases are based on the release schedule in the flood control diagram or the emergency spillway release diagram prepared by the USACE, whichever requires the greater release. Decisions regarding such releases are made in consultation with the USACE.

The flood control requirements are an example of multiple use of reservoir space. When flood management space is not required to accomplish flood management objectives, the reservoir space can be used for storing water. From October through March, the maximum allowable storage limit (point at which specific flood release would have to be made) varies from about 2.8 maf to 3.2 maf to ensure adequate space in Lake Oroville to handle flood flows. The actual encroachment demarcation is based on a wetness index, computed from accumulated basin precipitation. This allows higher levels in the reservoir when the prevailing hydrology is dry. When the wetness index is

high in the basin (i.e., high potential runoff from the watershed above Lake Oroville), required flood management space is at its greatest to provide the necessary flood protection. From April through June, the maximum allowable storage limit is increased as the flooding potential decreases, which allows capture of the higher spring flows for use later in the year. During September, the maximum allowable storage decreases again to prepare for the next flood season. During flood events, actual storage may encroach into the flood reservation zone to prevent or minimize downstream flooding along the Feather River.

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2.0 NEED FOR STUDY

DWR is currently in the process of renewing its license for the Oroville Facilities. FERC is responsible for granting the license and requires the applicant, DWR, to assess various resources, including recreation and socioeconomic resources. This study complies with FERC direction for preparing socioeconomic exhibits. Specifically, FERC guidelines indicate that a socioeconomic assessment should include a "local government fiscal impact analysis." Because this study focuses on local fiscal impacts of recreation activity at the Oroville Facilities, the study also will help DWR meet FERC's direction regarding preparation of a comprehensive recreation plan.

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3.0 STUDY OBJECTIVE(S)

Local fiscal effects primarily result from recreation use and O&M of the Oroville Facilities. As recreation-related spending levels vary in relation to use, local tax revenues generated by retail sales, hotel and motel stays, fuel purchases, and other expenditures by visitors also change. Similarly, changes in visitation to the Oroville Facilities also generate increased demand for law enforcement, fire protection, and other governmental services such as road maintenance and parks and recreation services.

The primary objective of the *Fiscal Impacts* study is to estimate the effects of activity generated by current and projected recreation use and by the O&M of the Oroville Facilities on sales tax revenues, lodging tax revenues, and other tax revenues of local governments, and on local public service costs related to recreation activity and O&M of the Oroville Facilities. A secondary objective of the study is to gain a better understanding of the relationship between the level of recreation use of the Oroville Facilities and resulting levels of public revenues and costs generated for local agencies. This understanding provides an analytical framework for evaluating effective recreation development strategies for potentially enhancing fiscal conditions for these agencies.

The *Fiscal Impacts* study focuses on characterizing existing fiscal conditions, estimating current local public revenues and costs associated with recreation at the Oroville Facilities, and projecting future changes in revenues and costs resulting from changes in recreation activity caused by projected growth in visitation to the Oroville Facilities. An additional objective of the study is to assess the fiscal effects related to O&M of the Oroville Facilities. Fiscal conditions are evaluated for six jurisdictions: the Cities of Oroville, Paradise, Gridley, Biggs, and Chico, as well as the County of Butte. Conditions and effects on other jurisdictions and special districts, other than the FRRPD, are not evaluated because fiscal effects of relicensing on these agencies would be minimal. Other Project-related fiscal effects, such as enhanced property values resulting from flood protection provided by the Project, also are not evaluated.

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4.0 METHODOLOGY

4.1 GENERAL APPROACH

The general approach to assessing the fiscal effects of recreation activity and O&M expenditures associated with the Oroville Facilities was to focus the analysis on the costs, revenues, and jurisdictions most affected by these activities and expenditures. From the perspective of local government, the largest fiscal impacts related to the Oroville Facilities result directly from providing services to recreation visitors to Lake Oroville and related recreation sites and facilities. For this analysis, these effects are referred to as visitor-driven impacts. Indirect fiscal impacts on local governments also result from the economic growth and subsequent employment and population growth spurred by recreation activity and O&M expenditures. These effects are referred to as indirect (growth-related) impacts.

To determine the jurisdictional focus of the analysis, data from the recreation user survey conducted for the *Recreation Surveys Report* (R-13) were evaluated to determine where most of the recreation visitor activity, including spending, occurs within Butte County. As expected, the data showed that most of the activity takes place in the Oroville area. Only a small portion of the activity occurs in the incorporated communities of Biggs, Chico, Gridley, and Paradise. More emphasis, therefore, was placed on assessing fiscal impacts on the City of Oroville, and in unincorporated Butte County where the facilities are located, than on the other jurisdictions.

To determine the technical scope of the study, comments provided by the Relicensing Collaborative and information obtained through interviews with local public service providers were considered in determining the costs and revenues most sensitive to use of the Oroville Facilities. On the cost side, fire protection, law enforcement, and road maintenance services were identified as the primary public services required by visitors. On the revenue side, sales tax and lodging tax (i.e., transient occupancy tax) revenues were identified as the revenue categories most sensitive to visitor spending. Emphasis was, therefore, placed on identifying effects on these cost and revenue categories.

Based on this jurisdictional and cost/revenue focus, fiscal models were developed to assess fiscal effects related to use of the Oroville Facilities. The fiscal models are part of an Economic-Fiscal Model and are linked to the economic component of the model, which is designed to assess the economic (e.g., sales, employment, and income) effects of changes in recreation activity or operations of the Oroville Facilities. The economic impact component of the Economic-Fiscal Model is based on input-output (I-O) analysis, which is a means of examining relationships within an economy, both between businesses and between businesses and final consumers. (Refer to the *Final Recreation Activity, Spending, and Associated Economic Impacts Report* [R-18] for more detail concerning the economic component of the model.)

The fiscal models were designed to assess fiscal effects on Butte County and the five cities within the County. Six spreadsheet models were developed, one for each of the

governmental units (i.e., jurisdictions) within the County. The Oroville and Butte County fiscal models are designed to comprehensively assess fiscal impacts on those jurisdictions. In other words, the model estimates impacts on all cost and revenue categories for both visitor-driven effects and indirect (growth-related) effects, although more detail is provided for visitor-driven effects. Because the Oroville and Butte County fiscal models are comprehensive in scope, the model output can be used to assess the net fiscal effects on each jurisdiction. Alternatively, the fiscal models for Biggs, Chico, Gridley, and Paradise are designed to focus solely on those costs and revenues most sensitive to recreation-related visitor activity, and the methods used to assess effects are less intensive. In essence, only visitor-driven fire protection, law enforcement, and road maintenance costs and sales and lodging tax revenues are estimated by the models for these communities. Because the models for Biggs, Chico, Gridley, and Paradise do not address all costs and revenues, the visitor-driven costs and revenues generated by the models cannot be directly compared to determine net fiscal effects for each community. Instead, estimates of selected costs and revenues are presented to provide a sense of the potential magnitude of effects on the communities generated by visitors.

In summary, construction of the fiscal models, which is graphically depicted in Figure 4.1-1, is intended to estimate the following public costs and revenues:

- **Visitor-driven costs (estimated for all jurisdictions):** includes fire, law enforcement, and road maintenance costs generated solely by non-residents of the different jurisdictions who visit the Oroville Facilities.

- **Indirect (growth-related) costs (estimated for Oroville and Butte County):** includes all costs, including fire, law enforcement, and road maintenance costs, indirectly generated by the population growth spurred by visitor spending and O&M spending.

- **Visitor-driven revenues (estimated for all jurisdictions):** includes sales tax and transient occupancy tax (TOT) revenues generated solely by the spending of non-residents of the different jurisdictions who visit the Oroville Facilities.

- **Indirect (growth-related) revenues (estimated for Oroville and Butte County):** includes all revenues indirectly generated by population and earnings changes and other factors spurred by visitor spending and O&M spending.

For each of these cost and revenue categories, factors were developed to translate the activities generated by recreation activity and O&M of the Oroville Facilities (i.e., recreation-related visitation and spending and O&M spending) into fiscal effects. These factors are hereafter referred to as cost and revenue translators.

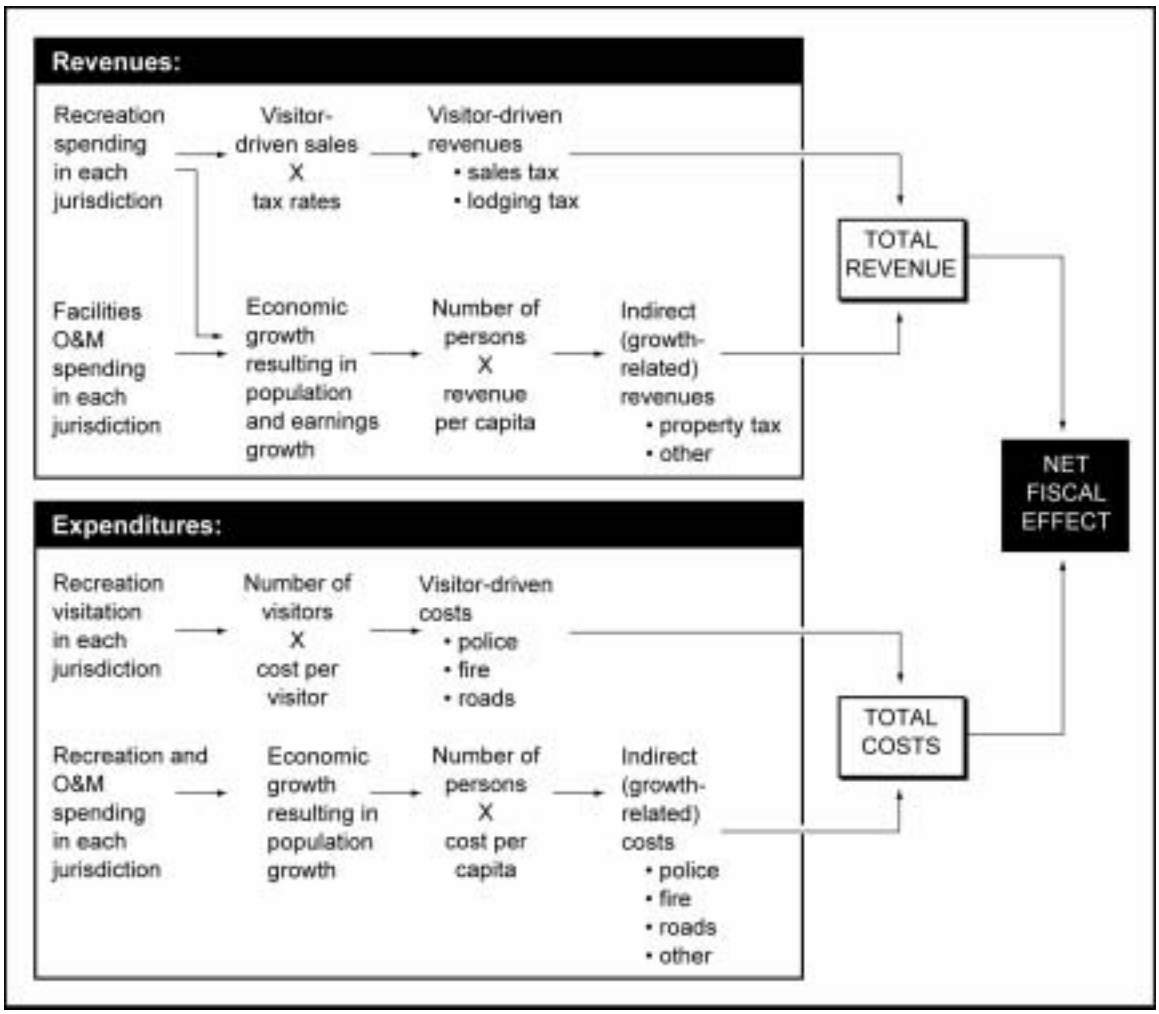

Figure 4.1-1. Fiscal impact modeling flowchart.

With the exception of effects on recreation and park districts, the fiscal impact analysis does not address potential fiscal effects on special districts and school districts. Additionally, the analysis does not address cost impacts on the State government. The State government has primary responsibility for providing public services, including fire fighting and law enforcement services, within the Lake Oroville State Recreation Area (LOSRA). (Note: local fire and law enforcement personnel at times assist with fire, medical emergency, and law enforcement calls within the LOSRA.)

Current and future recreational use of LOSRA recreation sites or O&M of the Oroville Facilities could affect costs and revenues for fire and recreation and park districts near the Oroville Facilities. Discussions with local agencies familiar with special districts and fire protection services in the vicinity of the Oroville Facilities indicate that no fire districts are or would be significantly affected by current or future use of LOSRA recreation sites or operations of the Oroville Facilities (pers. comm., Fowler 2003; Lucas 2002). Recreation and park districts near the LOSRA, however, could be affected by current or future levels of recreation use of the Oroville Facilities or by population growth indirectly generated by recreation- and O&M-related spending. Based on proximity to Oroville recreation sites, potentially affected districts include the Feather River Recreation and Park District and the Paradise Recreation and Park District (PRPD). Effects on recreation and park districts are assessed outside of the Economic-Fiscal Model developed for the study; methods used to assess these effects are discussed in Section 5.0, Study Results and Discussion.

4.2 DATA SOURCES AND MAJOR ASSUMPTIONS

4.2.1 Data Sources

As described in greater detail in Section 4.3, Model Development, public cost and revenue effects were estimated based on information gathered through interviews with service providers, budget data for each affected jurisdiction, current tax rates, visitation data for the Oroville Facilities, and population data. An effort was made to incorporate time-series budget data into the analysis; however, a review of these data suggested that budget processes and structures have changed over time for several service providers, making it difficult to disaggregate data and to develop consistent data sets for time-series analysis. Another problem with attempting to use time-series data is that over time public costs and revenues change in response to several factors, including changes in service levels, population levels, state funding levels, tax rates, internal budgeting issues, etc., making past budget data unrepresentative of current fiscal conditions. Additionally, several service providers indicated that past budget data are not necessarily reflective of current service levels, technology, and efficiencies. As a result, fiscal year (FY) 2001-02 and 2002-03 budget data, which were felt by service providers to be generally typical of service costs, were used in the development of cost and revenue translators used in the fiscal impact spreadsheet model. For visitation data, recreation visitor day estimates for FY 2002-03 were used. (Refer to the *Draft Existing Recreation Use Study* [R-9] for details concerning visitation use estimates.)

For the assessment of visitor-driven public service costs to the City of Oroville, cost estimates were developed based on interviews with City of Oroville staff and department heads, including the City's fire and police chiefs and personnel in the City's public works department (pers. comm., Boulant 2003; Brown 2003; Gibbons 2003; Nickelson 2003; Pittman 2003). Public services cost data were obtained from an extensive cost-of-services study prepared for the City of Oroville by Revenue & Cost Specialists (2002). Estimated unit costs, which were based on FY 2001-02 costs, included direct costs of providing services plus indirect costs, including administrative overhead costs and fixed asset replacement costs. These costs were updated to FY 2002-03 using the City's adopted FY 2002-03 budget.

For Butte County, estimates of public services costs related to non-residents who visited the Oroville Facilities were developed based on information collected during interviews with service providers (pers. comm., Crump 2003; Edell 2003; Fowler 2003; Koehler 2003; Phillips 2003; Waugh 2003), workload data provided by service providers, and budget data compiled from Butte County's FY 2001-02 and 2002-03 budgets.

For Chico, Paradise, Biggs, and Gridley, visitor-driven fiscal impact estimates were estimated based on adopted FY 2002-03 budget data for each jurisdiction. Additionally, existing recreation-related spending estimates from the Relicensing Study R-18 – *Final Recreation Activity, Spending, and Associated Economic Impacts*, and visitation estimates derived from data in the Relicensing Study R-9 – *Final Existing Recreation Use* were used to assess visitor-driven effects.

Population estimates used for the analysis were obtained from the California Department of Finance. Population effects related to growth generated by recreation and operations spending are estimated internally by the Economic-Fiscal Model based on employment changes generated by the economic component of the model and on commuting patterns. Data for commuting patterns were obtained from a variety of sources including ZIP Code Business Patterns, Census 2000, Journey to Work data, field interviews with major employers, and interviews with California Department of Transportation staff and local transportation planning staff (pers. comm., Duran 2003; Hayes 2003; Ivey 2003; Sherman 2003).

Data employed by the economic component of the Economic-Fiscal Model are discussed in detail in the Relicensing Study R-18 – *Final Recreation Activity, Spending, and Associated Economic Impacts*. Generally, the economic component of the Economic-Fiscal Model uses a combination of secondary source data coupled with selective field data collection and ground-truthing of secondary data. Secondary data used extensively by the model includes ZIP Code Business Patterns data, Census 2000 data, IMPLAN data files, REIS databases, and the Census of Agriculture.

4.2.2 Major Assumptions

The major assumptions listed below underlie the approach to assessing fiscal effects and developing the fiscal impact models.

- Current tax rates will remain unchanged in the future.

- Revenues distributed by the State and Federal government will remain at FY 2002-03 per capita levels in the future. In the case of motor vehicle license fees, revenue levels incorporated into the fiscal models do not reflect reductions in vehicle license fee rates enacted by the State during the current 2003-04 fiscal year. As a result, the models may overstate local government revenues generated by the motor vehicle license fee. On the other hand, the State has indicated that it will replace lost local motor vehicle license fee revenues, so FY 2002-03 per capita revenue levels may be representative of future levels.

- Fiscal conditions for agencies other than the Cities of Oroville, Paradise, Gridley, Biggs, and Chico; the County of Butte; and recreation and park districts within and near the Oroville Facilities are largely unaffected by recreation use of the Oroville Facilities.

- County zoning and general plan designation for properties within and near the Oroville Facilities will not change in the future.

- Ownership and management of lands by State agencies within the Oroville Facilities will remain unchanged in the future.

- Per-visitor public service costs are the same regardless of a visitor's point of origin.

- Population growth patterns will continue according to trends observed over the past 20 years.

- Over the long term, visitor spending and facilities operations spending will generate population growth in Butte County associated with new employment opportunities; unemployment rates within the County are assumed to be unaffected by new employment opportunities resulting from increased visitor spending.

- Spending categories and relationships will remain constant.

- Visitation patterns and recreational activities will follow existing trends.

- Expenditure patterns by state agencies for O&M of the Oroville Facilities will be the same as the spending pattern incorporated into the IMPLAN model spending vector for the state government sector. The IMPLAN spending vector indicates that about 5 percent of state government O&M spending would be subject to sales tax.

- State and federal revenue transfers to Butte County and cities within the County are assumed to remain constant (i.e., population growth generated by visitor

spending and O&M spending would not generate an increase in intergovernmental revenue transfers).

Other assumptions specific to the development of individual components of the fiscal models are described in Section 4.3, Model Development.

4.3 MODEL DEVELOPMENT

The following sections describe the methodology used to development the fiscal models for the six affected jurisdictions: the cities of Oroville, Chico, Biggs, Gridley; the Town of Paradise; and Butte County. It should be noted that the individual fiscal models are components of the Economic-Fiscal Model and rely on economic data generated by the economic (input-output) component of the model. A more detailed description of the structure and subcomponents of the fiscal models is provided in Appendix A, Fiscal Model Description.

4.3.1 Geographic Scope

As discussed previously, comprehensive fiscal models were developed for the City of Oroville and Butte County. The models are designed to estimate impacts on the budgets of each jurisdiction. The Oroville fiscal model is linked to the input-output (I-O) model for the Oroville Modeling Area. The Oroville Modeling Area includes the Oroville, Thermalito, Palermo, Bangor, Feather Falls, Yankee Hill, and Forbestown areas, and comprises three census County divisions (CCD): the Oroville CCD, the Palermo CCD, and the Feather Falls CCD. The Butte County fiscal model is linked to the I-O model for all areas within the County but assesses effects only for the unincorporated areas.

Focused fiscal models were developed for Biggs, Chico, Gridley, and Paradise that assess fiscal effects of out-of-area persons (non-residents) who visit the Oroville Facilities on each jurisdiction's budget. The Chico fiscal model is linked to the I-O model for the Chico Model Area that includes the Chico and Durham areas. The Paradise fiscal model is linked to the I-O model for the Paradise Model Area that includes Paradise, Magalia, and the Forest Ranch area. The Biggs-Gridley fiscal model is linked to the I-O model for the Biggs-Gridley Model Area that includes the Biggs and Gridley CCDs.

4.3.2 Development of Public Cost Translators

For purposes of fiscal model construction, public cost translators were developed to characterize the estimated changes in public expenditures associated with changes in use and O&M of the Oroville Facilities. As discussed previously, visitor-driven translators were developed for all jurisdictions for fire protection, law enforcement, and road maintenance expenditures. For the City of Oroville and Butte County, cost translators also were developed to account for all other costs indirectly generated by economic and population growth stimulated by recreation and O&M activities at the Oroville Facilities. These indirect (growth-related) costs have been aggregated into an "other costs" category.

The methods used to estimate cost translators vary by type of service and jurisdiction. In general, this variation is due to differences in the way services are provided, differences in demands for those services by visitors, and differences in the availability of data.

4.3.2.1 Visitor-Driven Cost Translators (All Jurisdictions)

The methodology used to develop visitor-driven cost translators for Oroville and Butte County is described in this section. Cost translators developed for these jurisdictions are summarized in Table 4.3-1.

Table 4.3-1. Oroville and Butte County visitor-driven cost translators.

Jurisdiction/Activity	Visitor-Driven Cost Translator (expenditures per visitor day)
Oroville	
Fire protection	$0.17
Law enforcement	$0.07
Road maintenance	$0.06
Butte County	
Fire protection	$0.29
Law enforcement	$0.21
Road maintenance	$0.03

Source: Derived from various sources; refer to text.

Fire Protection Costs

Translators for visitor-driven fire protection costs to the City of Oroville and Butte County were estimated according to the following steps. Details are provided in the cost subsections for each jurisdiction.

- Fire department personnel were interviewed to identify the types of calls generated by visitors to the Oroville Facilities.

- For the City of Oroville, data were collected concerning the total number of calls, by type, responded to by each fire department during FY 2001-02. Call data were adjusted to FY 2002-03 levels using the estimated change in Oroville's population from 2002 to 2003 (California Department of Finance 2003).

- For the City of Oroville, FY 2001-02 budget data from a detailed cost-of-services study prepared for the city (Revenue & Cost Specialists 2002) were used to develop an average response cost for the primary types of calls generated by visitors. This cost was adjusted to a FY 2002-03 level using the change in Oroville's Fire-Rescue Department costs from FY 2001-02 to 2002-03. Response costs included operating costs, departmental administrative costs, and equipment replacement costs. For Butte County, FY 2002-03 adopted budget data for fire protection expenditures were used to develop total expenditures, including regular and volunteer fire protection costs and equipment replacement costs, for providing Countywide fire protection and emergency services.

- Data were not available concerning the number of calls generated by visitors to the Oroville Facilities. To estimate these calls for Oroville and Butte County, a percentage of total calls attributable to visitors to the Oroville Facilities was estimated based on how visitation affects the service area population. For Oroville, this percentage was calculated by dividing the estimated average daily visitation by non-local recreationists (i.e., those living outside of Oroville) by the population residing within the Oroville city limits. (Note: It was assumed that only non-local recreationists would generate a net increase in costs.) The resulting percentage was applied to the Oroville's total number of service calls to estimate the number of calls attributable to visitors. Total visitor-related costs were then estimated by multiplying the estimated number of calls generated by visitors by Oroville's average cost per call. For Butte County, a percentage representing the portion of total calls attributable to non-resident visitors was estimated by dividing the estimated average daily visitation for all non-resident recreationists (i.e., those residing in communities not within unincorporated Butte County) by the population of the unincorporated area of Butte County. The resulting percentage was then applied to total Countywide fire protection expenditures, resulting in estimated expenditures related to serving visitors to the Oroville Facilities.

- Average costs per visitor were calculated by dividing total visitor-related costs by the number of visitor days at the Oroville Facilities.

Oroville Fire-Rescue Department

The Oroville Fire-Rescue Department partners with Butte County Fire Rescue and the CDF to provide fire protection and emergency medical services to the Greater Oroville Area, including the Oroville Dam area, the southern portion of the LOSRA, the Feather River area through Oroville, and areas adjacent to Thermalito Afterbay, Thermalito Forebay, and the OWA. Although the three agencies cooperatively respond to calls within the greater Oroville area, they do not share revenues beyond offsetting specific dispatching costs.

Within the Oroville Fire-Rescue Department's core service area (i.e., within the city limits), the fire department responded to approximately 3,000 calls during FY 2001-02 (including false fire alarm responses). Emergency medical aid-related calls, including medical rescue, medical assistance, and vehicle accident calls, accounted for 1,651 calls, or about 60 percent of non-false alarm calls. Emergency medical service calls cost the City of Oroville an estimated $561 per call during FY 2001-02 (Revenue & Cost Specialists 2002). When adjusted to FY 2002-03 budget and population levels, emergency medical aid-related responses totaled an estimated 1,676 calls at a cost of $567 per call.

Visitation to the LOSRA and related recreation facilities generates calls throughout the Oroville Fire-Rescue Department's service area as non-residents travel to and use recreation facilities. Visitation primarily generates calls related to traffic accidents,

medical aid to recreationists, and swift-water rescues on the Feather River. The majority of visitor-related incidents requiring fire-rescue department response are for emergency medical services (pers. comm., Pittman 2003).

No data are available concerning the number of calls generated by non-residents of the City of Oroville who visit the Oroville Facilities; however, an estimate of the Oroville Fire-Rescue Department's workload generated by non-residents who visit the Oroville Facilities was prepared based on the effects of visitation on the daily service area population. Oroville's population at the beginning of 2003 was an estimated 13,250 (California Department of Finance 2003), with non-residents who visit the Oroville Facilities adding an estimated average 1,900 persons daily to the service area population (based on an estimated 693,231 visitor days generated by non-Oroville residents per year), bringing the total daily population to 15,150. Based on this total, non-residents who visit the Oroville Facilities account for 12.5 percent of the service area's daily population, suggesting that non-resident visitors could generate a similar percentage of the Fire-Rescue Department's emergency medical services calls. Based on estimated FY 2002-03 emergency service calls and costs per call, nonresident visitors generated an estimated 210 emergency services calls and $117,810 in costs to the City of Oroville. When adjusted to FY 2002-03 dollars, non-resident visitor-related costs totaled an estimated $119,180. Based on an estimated 693,230 recreation visitor days by non-residents of the City of Oroville who visited the Oroville Facilities in FY 2002-03, current costs per recreation visitor day are estimated at $0.17.

Butte County Fire-Rescue Department

Since 1931, the County of Butte has contracted with the CDF for full service emergency and non-emergency response to incidents that include medical emergencies, rescues, structural fires, wildland fires, hazardous material spills, and other miscellaneous calls for service. Butte County pays CDF for staff services under a cooperative fire protection agreement. All paid staff are CDF employees; however, the Fire-Rescue Department is also staffed through a volunteer program, which is financed directly by Butte County.

During FY 2002-03, adopted expenditures for the regular fire protection program (i.e., contracted CDF services) totaled $9,056,400; expenditures for the volunteer fire protection program totaled $699,600. Equipment replacement costs totaled an estimated $377,900 (County of Butte 2002).

The Fire-Rescue Department is primarily responsible for responding to incidents in the unincorporated areas of the County. An exception to this is in areas of State responsibility (e.g., State-owned lands and part of the LOSRA) where CDF has primary responsibility. In practice, through the South County Interagency Fire Protection Agreement, fire units nearest to the location of an incident typically respond first to a call, regardless of primary jurisdictional responsibilities. Primary responsibility for calls in the LOSRA are divided among CDF, the Butte County Fire-Rescue Department, and the Oroville Fire-Rescue Department, depending on the location of the incident and the availability of fire units to respond to the call. For example, calls to incidents in the

LOSRA adjacent to the southern part of Lake Oroville are often handled by Butte County/CDF's Kelly Ridge Fire Station even though the incident is located in an area of State responsibility (pers. comm., Fowler 2003).

Within the LOSRA and OWA, visitors to the Oroville Facilities primarily generate calls for emergency medical services. Other types of calls generated by visitors include water rescues on Lake Oroville, the Feather River, Thermalito Forebay, and Thermalito Afterbay. Although few fires have occurred in the LOSRA, the Fire-Rescue Department occasionally responds to reports of illegal campfires. Outside of the LOSRA, visitors traveling to the Oroville Facilities generate emergency medical services calls related to traffic accidents and occasionally generate calls to respond to grass fires (pers. comm., Fowler 2003).

No data are available concerning the number of calls generated by non-residents of unincorporated Butte County who visit the Oroville Facilities; however, an estimate of the Butte County Fire-Rescue Department's workload generated by visitors to the Oroville Facilities was prepared based on the effects of non-resident visitors on the service area population. The population of the unincorporated portion of Butte County was an estimated 94,300 at the beginning of 2003 (California Department of Finance 2003), with non-resident (i.e., recreationists who do not reside within unincorporated Butte County) visitors to the Oroville Facilities adding an estimated average 1,910 persons daily to the service area population (based on an estimated 697,970 total visitor days per year originating from areas other than unincorporated Butte County), bringing the total daily population to 96,210. Based on this total, non-resident visitors account for 2.0 percent of the service area's population, suggesting that visitors could generate a similar percentage of the County Fire-Rescue Department's calls. Based on FY 2002-03 expenditures for the Fire-Rescue Department, including regular and volunteer fire protection costs and equipment replacement costs, non-resident visitors accounted for an estimated $201,800 in costs to Butte County. Based on an estimated 697,970 recreation visitor days annually to all sites in the LOSRA, current costs per visitor day are estimated at $0.29.

Law Enforcement Costs

Translators for visitor-driven law enforcement costs to the City of Oroville and Butte County were estimated as follows. Details are provided in the cost sections for each jurisdiction.

- Law enforcement personnel were interviewed to identify the types of calls and costs generated by visitors to the Oroville Facilities.

- Budget data (and a related budget study for the City of Oroville for FY 2001-02) were used to develop total (i.e., operating, administrative, and equipment replacement) costs for responding to all calls during FY 2002-03.

- Data were not available concerning the number of law enforcement calls generated by non-resident visitors to the Oroville Facilities, so the percentage of total costs related to responding to calls generated by all recreationists (i.e., resident and non-resident) visiting the Oroville Facilities was estimated based on the professional judgment of law enforcement personnel.

- Total visitor-related costs were estimated by multiplying the total costs by the percentage of total costs estimated to be generated by Oroville Facilities visitors.

- Average costs per visitor were calculated by dividing total visitor-related costs by total Oroville Facilities visitors.

Oroville Police Department

The Oroville Police Department provides law enforcement services to areas within Oroville's city limits. Major recreation sites within or adjacent to the service area include the Feather River, including the Feather River Parkway and Riverbend Park (operated by the Feather River Recreation and Park District), the Feather River Fish Hatchery, Thermalito Forebay, and the entrance to the OWA. Additionally, most visitors to the LOSRA travel through Oroville on their way to Lake Oroville, stopping to shop or to use local accommodations.

Visitation to the Oroville Facilities affects the workload of the Oroville Police Department in several ways. Congestion on local roads, including Oroville Dam Boulevard and Olive Highway, is created by traffic heading to Lake Oroville recreation sites, particularly during summer weekends, resulting in increased accidents and traffic enforcement activities. Visitors, who often keep valuables in vehicles, are susceptible to thefts, requiring increased patrols of motel and grocery store parking lots during peak-use months. The Police Department also establishes extra checkpoints during the summer to discourage people from driving under the influence of alcohol. Special events, such as the Bassmaster fishing tournament and the 4th of July fireworks at Lake Oroville, require increased patrolling and staffing to manage traffic and monitor parking lots (pers. comm., Brown 2003; Nickelson 2003).

No data are available concerning the number of police calls and incidents related to non-residents of the City of Oroville who visit the Oroville Facilities. According to the professional judgment of departmental staff, costs generated by responding to incidents and activities generated by resident and non-resident LOSRA recreationists account for approximately 3 percent of the Police Department's annual operating budget (pers. comm., Brown 2003; Nickelson 2003). According to the Revenue & Cost Specialists (2002) study of public service costs, police services (including administrative overhead and fixed asset replacement costs) totaled approximately $2.7 million in FY 2001-02, which was approximately the same as in FY 2002-03, suggesting that visitors to the Oroville Facilities generated $80,050 in costs to the City of Oroville, assuming that recreationists account for 3 percent of total costs. Based on an estimate of 1,137,200

visitor days (resident and non-resident) per year, costs per visitor day are currently about $0.07.

Butte County Sheriff's Department

The Butte County Sheriff's Department has primary responsibility for law enforcement in the unincorporated areas of Butte County. Within the LOSRA at Lake Oroville, rangers with the State Department of Parks and Recreation provide primary law enforcement services; however, the Sheriff's Department often assists with calls. In other areas of the LOSRA, the Sheriff's Department either provides first response to calls or assists State rangers. Within the OWA, the Sheriff's Department has primary responsibility for law enforcement (pers. comm., Waugh 2003).

The Sheriff's Department has an ongoing contract with DWR to patrol waterways and parking areas at Thermalito Afterbay. Additionally, the department operates a recreational boating and waterways patrol that is funded through a grant from the California Department of Boating and Waterways. During the summer, the Sheriff's Department runs one boat patrol on Lake Oroville and additional patrols on navigable rivers in the County.

In FY 2002-03, the Sheriff-Coroner Department's adopted budget totaled an estimated $13.7 million. Included in the budget was $4.1 million for administration, $7.2 million for general operations, $1.2 million for special enforcement (e.g., DWR contract for Thermalito Afterbay patrols), and $405,600 for equipment replacement (County of Butte 2002).

No data are available to determine the number of calls generated by non-residents of unincorporated Butte County who visit the Oroville Facilities. Based on the professional judgment of Butte County Sheriff's Department staff (pers. comm., Waugh 2003), between 1 and 3 percent of the department's operating budget goes toward providing services to recreationists (resident and non-resident) visiting the Oroville Facilities. Assuming the mid-point of this range represents actual costs, visitor-related costs accounted for 2 percent of the estimated $11.7 million budgeted for department administration, general law enforcement operations, and equipment replacement for FY 2002-03, suggesting recreationists-related costs of $234,300. (Special enforcement costs are directly recovered through contractual agreements.) Based on an estimated 1,137,200 annual visitor days (resident and non-resident) at the Oroville Facilities, costs per visitor day are currently about $0.21.

Road Maintenance Costs

Translators for visitor-driven road maintenance costs to the City of Oroville and Butte County were estimated according to the following steps. Details are provided in the cost subsections for each jurisdiction.

- Public works personnel were interviewed to identify the streets and roads primarily used by visitors to the Oroville Facilities, to collect data concerning the miles of roadways maintained by each department, and to clarify budget information for road maintenance activities. This information was supplemented by information from Study R-1 – *Vehicular Access* concerning specific roads used to access recreation sites.

- Budget data (and a related budget study for the City of Oroville) were used to develop an average cost per roadway mile maintained by each department.

- The mileage of streets and roads used primarily by recreationists to reach recreation sites was estimated based on maps and information provided by public works personnel. Annual costs to maintain these streets and roads were estimated by applying the average maintenance cost per roadway mile to the mileage of identified streets and roads.

- No data were available concerning the percentage of roadway use attributable to non-resident visitors to the Oroville Facilities, so the percentage of use generated by non-resident visitors was estimated based on how visitation affects the service area population. For the City of Oroville, the population within the city and estimated non-resident average daily visitation to the Oroville Facilities were used for this calculation. For Butte County, the estimated population of the unincorporated area of the County and average daily visitation by non-residents of the unincorporated area to the Oroville Facilities were used for the calculation.

- Total visitor-related road maintenance costs were estimated by multiplying the estimated percentage of visitor-related roadway use by the total estimated cost of maintaining roadways identified as used by visitors to the Oroville Facilities.

- Average costs per visitor day were calculated by dividing total visitor-related costs by non-resident Oroville Facilities visitors.

Oroville Public Works Department

With the exception of Highways 70 and 162, which are maintained by the California Department of Transportation (Caltrans), the Oroville Public Works Department maintains streets within Oroville's city limits. Maintenance activities include shoulder grading, pothole patching, crack sealing, chip sealing, and asphalt overlaying. Although Caltrans maintains Highway 162, which includes a portion of Oroville Dam Boulevard and Olive Highway (two roadway segments heavily used by Lake Oroville recreationists), the City of Oroville maintains several other streets often used by recreationists and visitors to reach recreation sites, including the portion of Oroville Dam Boulevard between its intersections with Olive Highway and Glen Drive, Montgomery Street between Highway 70 and Oroville Dam Boulevard, Nelson Avenue and Table Mountain Boulevard between Highway 70 and Montgomery Street, Cherokee Road between Table Mountain Boulevard and the city limits, and the portion of Ophir Road

within the city limits. Several other city streets, including 1st Avenue, 5th Avenue, Feather River Boulevard, and Arlin Rhine Drive, are used to reach recreation sites along the Feather River (pers. comm., Boulant 2003; Gibbons 2003).

The Oroville Public Works Department maintained about 90 total miles of streets and roads at a cost estimated of approximately $3.2 million (including administrative overhead and fixed asset replacement costs) during FY 2001-02 (Revenue & Cost Specialists 2002). This cost translates to an average of about $36,000 per mile, which is about the same as costs in FY 2002-03. The City-maintained streets and roads identified as being regularly used by recreationists total an estimated 9.8 miles, suggesting that annual maintenance of these streets and roads costs the City about $352,800. Visitor use accounts for an unknown portion of the wear and tear on these streets and roads, but visitor use can be approximated based on the effect that out-of-town visitors have on the total population that regularly uses Oroville's streets. As discussed previously (see the Oroville Fire-Rescue Department subsection), non-resident visitors add an average of 1,900 persons to the city's daily population, accounting for an estimated 12.5 percent of the daily population of Oroville. Applying this percentage to the estimated annual maintenance cost for streets and roads regularly used by recreation visitors to the Oroville Facilities results in an estimated annual cost of about $44,100 to the City. Based on an estimated 693,231 non-resident visitor days during FY 2002-03, costs per visitor day are currently about $0.06.

Butte County Public Works Department

The Butte County Public Works Department maintains about 1,355 miles of County roads within unincorporated areas of Butte County (pers. comm., Phillips 2003). According to Butte County's adopted FY 2002-03 budget, road maintenance costs during the year were about $8.6 million. Adopted general administrative expenditures for the Public Works Department during FY 2002-03 totaled $894,200. Assuming administrative costs related to road maintenance activities are proportional to road maintenance's share of the total public works budget (51 percent), administrative costs for road maintenance totaled approximately $460,500 during FY 2002-03. Based on these costs and the number of roadway miles maintained by the County, average costs per mile were approximately $6,670 during FY 2002-03.

The use of roads by visitors (i.e., non-residents of unincorporated Butte County) to access the Oroville Facilities generates costs to Butte County by increasing the need to regularly maintain these roads. Although several of the roads heavily used by recreationists to reach popular recreation sites in the LOSRA are either State-maintained highways (e.g., Highway 70, Highway 162) or City of Oroville-maintained streets (e.g., the Oroville Dam Boulevard, Montgomery Street), a number of County-maintained roads are also used to reach the Oroville Facilities. According to the Butte County Public Works Department (pers. comm., Crump 2003; Edell 2003) and roadway access information provided by Study R-1 – *Vehicular Access* the following roadway segments are regularly used by visitors:

- Kelly Ridge Road;
- Oroville Dam Boulevard east of Glen Drive;
- Canyon Drive between Olive Highway and Oroville Dam Boulevard;
- Royal Oaks Drive between Canyon Drive and Kelly Ridge Road;
- Oroville Quincy Highway between East Fork Canyon Creek and the Butte County line;
- Forbestown Road between Oroville Quincy Highway and the Butte County line;
- Lumpkin Road from Forbestown Road to the north shore of the South Fork Feather River arm of Lake Oroville;
- the portion of Ophir Road outside of the City of Oroville;
- Lower Wyandotte Road between Ophir Road and Oroville Bangor Highway;
- Miners Ranch Road;
- Oroville Bangor Highway between Miners Ranch Road and La Porte Road;
- Los Verjeles Road between La Port Road and the Butte County line;
- Pentz Road;
- Durham Pentz Road;
- Vinton Gulch Road;
- Truet Road;
- Dark Canyon Road;
- Cherokee Road between the Oroville city limits and Burma Road;
- Thompson Flat Cemetery Road;
- Long Bar Road between the Oroville city limits and Colina Way;
- Colina Way between Long Bar Road and Lakeland Boulevard;
- Lakeland Boulevard;
- Nelson Avenue west of the Oroville city limits;
- Wilbur Road;
- Grand Avenue west of the Oroville city limits;
- Larkin Road between Highway 162 and East Hamilton Road;
- East Hamilton Road;
- Pacific Heights Road;
- Arroyo Drive;
- Heritage Road;
- Rachel Drive;
- Garden Drive;
- The portion of Feather River Boulevard outside of the City of Oroville;
- Big Bend Road;
- Hurelton Road;
- Oregon Gulch Road; and
- The portion of Table Mountain Boulevard outside of the City of Oroville.

These roads total an estimated 144 miles. Based on an average road maintenance cost of $6,670 per mile, annual maintenance of roads used by non-residents of unincorporated Butte County who visit the Oroville Facilities currently costs Butte County an estimated $960,480 annually.

No data are available concerning the percentage of roadway use and wear that is associated with non-residents of unincorporated Butte County who visit the Oroville Facilities. Roadway use and wear, however, can be approximated based on how visitation affects the population of unincorporated Butte County. As discussed previously (see the Butte County Fire-Rescue Department subsection), non-residents of unincorporated Butte County who visit the Oroville Facilities adds an estimated 1,910 persons to the unincorporated area's daily population, accounting for 2.0 percent of the area's daily population. This increase in the area's population suggests that non-resident visitors account for 2.0 percent of the cost to maintain the roads used by recreationists. Applying this percentage to the estimated maintenance cost of $960,480 for these roads yields an estimated visitor-related cost to Butte County of $19,210. Based on an estimated 697,974 non-resident visitor days during FY 2002-03, this cost amounts to $0.03 per visitor day.

Biggs, Chico, Gridley, and Paradise

Visitor-driven cost translators for fire protection, law enforcement, and road services were estimated for the cities of Biggs, Gridley, Chico, and Paradise using a methodology that varied in detail and precision from the methodology used to estimate translators for Oroville and Butte County. In essence, the visitor-driven cost translators for Biggs, Chico, Gridley, and Paradise were developed based on the assumption that non-resident visitor costs are a function of visitor sales. Visitor sales levels were therefore used as a proxy for levels of visitor activity in a community. In other words, as visitor sales increase, visitor-related public costs are assumed to increase proportionally.

The translation estimation procedure for Biggs, Chico, Gridley, and Paradise involved a three-step calculation. First, an estimate of total direct visitor spending in each of the community modeling areas was prepared based on estimated visitation levels for the Oroville Facilities and spending-per-visitor estimates, as represented by visitor-spending profiles. (Refer to the *Final Recreation Activity, Spending, and Associated Economic Impacts Report* [R-18] for a discussion of the methodology used to estimate visitor-spending profiles.) The spending estimates were fed into the economic component of the Economic-Fiscal Model to generate estimates of total sales, as represented by total industrial output, related to visitor spending in each community modeling area. The total visitor-related sales were then divided by total sales in the baseline economic model for each of the jurisdictions. This calculation produced a percentage of total sales in each jurisdiction attributable to visitor spending, which was used in the fiscal models to translate visitor activity into public services costs. (Note: these percentages, or cost translators, will change as visitor spending levels change in response to different visitor scenarios.) Table 4.3-2 shows an example of the visitor-driven cost translators for each jurisdiction.

Table 4.3-2. Visitor-driven cost translators for Biggs, Chico, Gridley, and Paradise for an example visitor scenario.

Jurisdiction	Cost Translator (Visitor % Of Sales)
Biggs	1.16%
Chico	0.94%
Gridley	1.16%
Paradise	2.33%

Source: Derived from various sources: refer to text.

For each jurisdiction, FY 2002-03 budgeted costs for fire, police, and road services were then multiplied by the relevant translator to estimate the portion of total fire, police, and road costs assumed to be associated with visitors to the Oroville Facilities. In practice, the fiscal models, which are linked to the I-O component of the Economic-Fiscal Model, performs these calculations. Table 4.3-3 shows the results of these calculations for an example visitor scenario.

Table 4.3-3. Visitor-driven cost estimates for Biggs, Chico, Gridley, and Paradise for an example visitor scenario.

Jurisdiction/Activity	Budgeted Costs	Visitor-Driven Costs
BIGGS: Visitor percent of sales = 1.16%		
Fire protection	$8,000	$93
Law enforcement	$160,186	$1,863
Road maintenance	$48,863	$568
TOTAL	$217,049	$2,524
CHICO: Visitor percent of sales = 0.94%		
Fire protection	$8,799,259	$82,406
Law enforcement	$13,532,600	$126,734
Road maintenance	$3,494,000	$32,722
TOTAL	$25,825,859	$241,862
GRIDLEY: Visitor percent of sales = 1.16%		
Fire protection	$440,318	$5,121
Law enforcement	$1,704,726	$19,827
Road maintenance	$288,009	$3,350
TOTAL	$2,433,053	$28,298
PARADISE: Visitor percent of sales = 2.33%		
Fire protection	$2,762,000	$64,388
Law enforcement	$3,184,000	$74,226
Road maintenance	$1,019,500	$23,767
TOTAL	$6,965,500	$16,2381

Source: County of Butte 2002 and output of the Economic-Fiscal Model

4.3.2.2 Indirect (Growth-Related) Cost Translators (City of Oroville and Butte County Only)

As discussed previously, indirect (growth-related) cost translators were developed for the City of Oroville and Butte County. The following sections describe the methods used to develop the translators used by the fiscal models to assess the costs indirectly generated by the economic and population growth associated with the use and O&M of the Oroville Facilities. As noted in the following sections, much of the detailed data used to develop translators is presented in tables in Appendix A, Fiscal Model Description.

City of Oroville

Translators for indirect (growth-related) changes in public services costs for the City of Oroville were developed by first identifying City expenditures sensitive to economic and population growth potentially generated by the use and O&M of the Oroville Facilities. Using Oroville's adopted FY 2002-03 budget, expenditures were grouped into three general categories: general fund expenses, restricted funds, and enterprise funds (Appendix A, Table A-15). Note that City budgeting involves significant transfers from restricted or enterprise funds to various operating funds. Although these fund transfers are complex, it was necessary to include them in the analysis to balance expenditures with revenues. (Capital improvements were not included in this analysis.)

Using professional judgment, expenditures were then identified as either endogenous expenditures (i.e., those sensitive to changes in sales, earnings, or population changes) or exogenous expenditures (i.e., those not sensitive to growth, such as fixed grants). Most endogenous expenditures in the model (92 percent) were assumed to be population-sensitive, although some costs were assumed to be partially sensitive to changes in sales levels to account for the effect of changes in business activity on City expenditures. On the endogenous expenditure side of the budget, which accounts for 2 percent of total expenditures, several City departments have programs and expenditures linked to fixed grants that are not population-based. These primarily reflect services that are supported by State revenues, such as Oroville Airport operations. Table A-17 in Appendix A shows the percentage allocation of Oroville expenditures to endogenous and exogenous categories, and Table A-19 shows the resulting allocation of expenditures once the percentages were applied to baseline budgeted expenditures.

The last step in the process was to generate expenditure coefficients, or translators, for each of the expenditure categories. This was done by dividing endogenous expenditures by their appropriate baseline values, which are shown in Appendix A, Table A-20. For example, population-sensitive costs were divided by the City of Oroville's 2003 population of 13,250 to generate a per capita translator. Sales-sensitive costs were divided by baseline sales from the I-O component of the Economic-Fiscal Model to generate a per-dollar-of-sales translator. The resulting matrix of expenditure coefficients, or translators, is presented in Appendix A, Table A-22.

To generate estimates of indirect (growth-related) expenditure effects, the fiscal model applies the cost translators to population and sales changes attributable to the Oroville Facilities use and O&M, as estimated by the economic component of the Economic-Fiscal Model.

Butte County

Indirect (growth-related) cost translators for Butte County were developed using methods similar to those described for the City of Oroville. As with construction of the Oroville fiscal model, capital improvement costs were left out of the Butte County fiscal model. Capital improvements often involve multi-year expenditures that require complex fund carry-overs that are difficult to model and would have little purpose in this analysis.

To estimate indirect (growth-related) cost translators, adopted FY 2002-03 Butte County budget expenditures were aggregated into the expenditure categories shown in Appendix A, Table A-1. Expenditures were then categorized as sensitive to changes in population, sales, or earnings within the County (i.e., endogenous expenditures) or sensitive to changes in factors external to the County (i.e., exogenous expenditures) (Appendix A, Table A-4). Indirect cost coefficients, or translators, were then calculated by dividing endogenous costs by the relevant baseline factors (e.g., population, sales, and earnings) shown in Appendix A, Table A-7, resulting in the matrix of translators presented in Appendix A, Table A-9. The fiscal model applies the cost translators to population and sales changes attributable to recreation activity and O&M of the Oroville Facilities, as estimated by the economic component of the Economic-Fiscal Model, to generate estimates of indirect (growth-related) expenditure effects for Butte County.

Conceptually, most of the expenditures in Butte County are a function of changes in population. Thus, translators for most of the endogenous expenditures were developed based on an assumed linear relationship between total expenditures and population within the County**.** Many of the County service costs were assumed to be entirely a function of population. These include parks and recreation, libraries, education, water services, sanitation, transit, and miscellaneous services. It was necessary to include contingencies and reserves in the analysis to balance the budget. These were also assumed to be a function of population. In actuality, they are a function of the magnitude of costs, which in this analysis are primarily a function of the County's population.

Public assistance costs (welfare, health care, and child support) are treated as exogenous factors in the fiscal model. These services are supported by Federal and State revenues, which are also treated as exogenous. Although public assistance costs are considered exogenous factors in the model, the beneficial economic effects generated by increases in visitor-related spending or operations spending associated with the Oroville Facilities could have a beneficial effect on public assistance costs by

generating jobs and income for residents who are currently relying on public assistance. These potential fiscal effects are not estimated by the fiscal model.

A small number of indirect costs are considered to be driven by activities associated with Countywide sales in certain economic sectors. For example, the model treats agricultural services as being a function of sales in the agriculture sector.

Some costs of County government are associated with providing services for people who do not reside in Butte County. Given the total population of counties surrounding Butte County, these costs are potentially significant. To estimate these costs, budgets for other northern California counties were examined, which revealed that even for counties with small populations, considerable expenditures were associated with the provision of certain services, such as road maintenance costs. The fiscal model was therefore designed to assign portions of general administration, judicial, law enforcement, detention, fire protection, road operations, and inspection services to exogenous cost categories. In the case of inspection services, this reflects the portion of expenditures that are a function of regulations promulgated outside the County, such as regulations for pesticide applications, which are a function of land area rather than County population.

4.3.3 Development of Public Revenue Translators

Revenue translators were developed for the fiscal model to assess the visitor-driven and indirect (growth-related) revenue effects associated with use and O&M of the Oroville Facilities. For all jurisdictions, translators were developed for those revenues expected to be most sensitive to recreation-related expenditures, including sales and lodging tax revenues. For Oroville and Butte County, translators also were developed to account for all other revenues received by these jurisdictions that are sensitive to indirect growth-related effects. Specific methods employed to develop the revenue translators are described in the following sections.

4.3.3.1 Visitor-Driven Revenue Translators (All Jurisdictions)

The following sections describe how visitor-driven revenue translators were developed for sales and lodging tax revenues for all jurisdictions.

Sales Tax Revenues

Within the fiscal model, changes in sales tax revenues are a function of changes in taxable sales generated by spending in each jurisdiction. To assess sales tax revenue effects, visitor-spending estimates, which were developed as part of the *Final Recreation Activity, Spending, and Associated Economic Impacts Report* (R-18), were input to the economic component of the Economic-Fiscal Model. The model generated estimates of sales for sectors subject to the sales tax. The 1 percent local portion of the 7.25 percent sales tax rate was then applied to estimated taxable sales in each jurisdiction to arrive at an estimate of sales tax revenue generated by visitor spending.

To undertake the sales tax revenue analysis, two modifications to the data generated by the economic component of the model were required: (1) producer prices used by the economic component of the model were adjusted to purchaser prices, and (2) model coefficients were calibrated to duplicate total sales tax collections in the modeled jurisdictions.

The sales estimates generated by the economic component of the Economic-Fiscal Model are expressed in producer prices, which are quite different from the "cash register sales," or purchaser prices, subject to taxation. The economic component of the Economic-Fiscal Model allocates portions of the "cash register sales value" to all industries that add value to a product, including the manufacturer, wholesaler, and retailer. For example, if a customer pays $2.00 (the "cash register sales value") for a gallon of gasoline at a convenience store, the economic model would assign only the retailer mark-up, perhaps $0.25, as sales to the convenience market sector. Within the model, sales in sectors subject to sales taxation were inflated in accordance with their trade margins to translate producer prices into purchaser prices.

Once sales were converted to purchaser prices, the fiscal model was calibrated using adopted sales tax revenue for each jurisdiction for FY 2002-03. Specifically, the model's baseline sales levels for those sectors subject to the sales tax were calibrated to actual sales tax revenue for each jurisdiction.

Table 4.3-4 presents an example of how the model was adjusted to producer prices and calibrated. Table 4.3-5 provides an example of the calculations made by the economic component of the Economic-Fiscal Model to produce an estimate of sales tax revenue.

Table 4.3-4. Example model calibration for sales tax analysis.

Taxable Sectors	Sales Change	Trade Margin	Producer Price	Purchaser Price
Building materials and gardening	$31,412.1	0.3	$104,707	$136,119
General merchandise stores	$52,359.6	0.3	$174,532	$226,892
Food stores	$56,433.0	0.1	$564,330	$620,763
Auto dealers and service stations	$73,143.7	0.15	$487,625	$560,768
Apparel and accessory stores	$14,385.9	0.4	$35,965	$50,351
Furniture and home furnishings stores	$28,710.7	0.4	$71,777	$100,487
Eating and drinking establishments	$121,328.8	NA	$121,329	$121,329
Miscellaneous retail	$55,392.0	0.3	$184,640	$240,032
TOTAL				$2,056,741

Source: Economic-Fiscal Model for the study.

Table 4.3-5. Example sales tax calculations.

Taxable Sectors	Sales	Taxable Portion	Taxable Sales	Tax Rate	Sales Tax Change
Building materials and gardening	$136,119	100.00%	$136,119	1.0%	$1,361
General merchandise stores	$226,892	100.00%	$226,891	1.0%	$2,268
Food stores	$620,763	8.08%	$50,157	1.0%	$501
Auto dealers and service stores	$560,768	75.00%	$420,576	1.0%	$4,205
Apparel and accessory stores	$50,351	100.00%	$50,350	1.0%	$503
Furniture and home furnishings stores	$100,487	100.00%	$100,487	1.0%	$1,004
Eating and drinking	$121,329	100.00%	$121,328	1.0%	$1,213
Miscellaneous retail	$240,032	100.00%	$240,031	1.0%	$2,400
TOTAL	$2,056,741		$1,345,943		$13,459

Source: Economic-Fiscal Model for the study

Lodging Tax Revenues

Similar to sales tax revenues, lodging tax revenues change in relationship to sales in the hotels and lodging sector of the economic component of the Economic-Fiscal Model. Lodging tax revenues for each jurisdiction were estimated using methods similar to those used for the sales tax revenue analysis. The model was calibrated using adopted FY 2002-03 lodging tax revenues for each jurisdiction. Lodging tax revenues were then estimated by multiplying sales in the hotels and lodging sector by each community's lodging tax rate. Current lodging tax rates are displayed in Table 4.3-6.

Table 4.3-6. Property, sales, and lodging tax rates used by the fiscal model.

Jurisdiction	Effective Local Property Tax Rate[1]	Local Sales Tax Rate[2]	Local Lodging Tax Rate
Biggs	0.15%	1.0%	No tax
Chico	0.07%	1.0%	10%
Gridley	0.13%	1.0%	6%
Oroville	0.06%	1.0%	9%
Paradise	0.23%	1.0%	6%
Butte County	0.13%	1.0%	6%

Notes:
[1] Represents the percentage of locally assessed property value received by local government as property tax revenue.
[2] Represents the 1 percent local portion of the total 7.25 percent sales tax rate.

Sources: Annual budget documents for the Cities of Oroville, Paradise, Biggs, Gridley, and Chico and for the County of Butte and State Controller's Office 2002a 2002b, 2003a, 2003b.

4.3.3.2 Indirect (Growth-Related) Revenue Translators (City of Oroville and Butte County Only)

For Oroville and Butte County, indirect (growth-related) revenue translators were developed to assess the effects on all revenues potentially affected by changes in

population, sales, and earnings generated by use and O&M of the Oroville Facilities. The following sections describe methods used to assess these effects.

Exogenous revenue factors include fixed grants, such as a grant for a boat ramp on the Feather River. They also include revenue collected for services to the larger population of northern California. For example, a portion of gas tax collections is for sales of gas to people who do not live in the County.

Property Tax Revenues

Indirect (growth-related) property tax revenue effects were estimated based on the assumption that property tax revenues change in relationship to changes in earnings. In other words, as personal earnings increase, people invest in property improvements and maintenance, resulting in increased assessed property valuations. Similarly, as business earnings improve, businesses become more valuable and expand their operations to handle more customers, increasing the assessed value of business properties.

To assess the effects of property tax revenue, the fiscal model was calibrated for each jurisdiction using FY 2002-03 current-year secured and unsecured property tax revenues, delinquency revenues, and penalty revenues. A coefficient/translator, representing the relationship between earnings and property tax revenue, was then calculated by dividing FY 2002-03 revenues by baseline earnings. The fiscal model then applied this coefficient to earnings changes generated by the economic component of the Economic-Fiscal Model to produce an estimate of changes in property tax revenues for each jurisdiction. Table 4.3-7 provides an example of the model calculations.

Table 4.3-7. Example property tax revenue calculations performed by the model.

Jurisdiction	Baseline Earnings (1,000)	Earnings Change (1,000)	Coefficient	Baseline Property Tax Revenue (1,000)	Property Tax Revenue Change (1,000)
Butte County	$2,080,835	$11,026	0.006696	$13,932	$74
Oroville City	$101,871	$1,879	0.004068	$414	$14

Source: Economic-Fiscal Model for the study.

All Other Revenues

To develop indirect (growth-related) revenue translators for all other revenues for Butte County and Oroville, FY 2002-03 adopted budget revenues were entered into the fiscal model and aggregated into the categories shown in Appendix A, Tables A-1 (Butte County) and A-14 (Oroville). These categories include revenues with similar characteristics in terms of the economic variables (e.g., population levels, sales levels) that drive the revenues. The economic variables, including endogenous and exogenous variables that drive revenue changes for Butte County, were then specified, as shown in Appendix A, Tables A-3 (Butte County) and A-16 (Oroville). The endogenous variables

include revenues that change in relationship to sales, earnings, and population levels in each jurisdiction. The exogenous variables include revenues that change in relationship to outside factors, such as the portion of revenues attributable to fixed grants or competitive grant programs and intergovernmental revenue transfers that are not necessarily population-based. As shown in Appendix A, Tables A-3 and A-16, percentages were assigned to each revenue category according to the endogenous and exogenous factors that are considered to drive revenue levels.

The model accounts for indirect (growth-related) sales and lodging tax revenues using methods similar to those described for visitor-driven sales and lodging tax revenues. The model treats other revenues as follows:

- Gas tax revenue is considered to be a function of sales in the trade sector.
- Motor vehicle license fee revenue is considered to be a function of population growth.
- License and permit revenue is attributed to business licenses, which are considered to be a function of changes in business sales.
- Other license and permit revenues, such as those generated by animal licenses, are considered to be a function of changes in population growth.
- Aircraft tax revenue is considered to be a function of earnings.
- Fines and forfeiture revenues are considered to be a function of changes in population.
- Revenue from use of money and property, which is largely driven by interest rates, is considered exogenous in the model.
- State revenue (other than gas tax, motor vehicle tax, and sales tax realignment revenues) is considered to be a function of changes in population.
- Federal revenues are considered to be primarily a function of population change. A small portion of Federal revenues are reserved for competitive grants that are not population-based. These revenues are considered exogenous in the model.
- Intergovernmental revenue and charges for services are considered exogenous in the model. These include revenues for services typically billed to other local jurisdictions or to the State of California, such as the costs for fire fighting activities outside Butte County.

A matrix of coefficients, or revenue translators, was then created by dividing the endogenous revenues shown in Appendix A, Tables A-5 and A-18 by their related baseline values, as shown in Appendix A, Tables A-7 for Butte County and A-20 for

Oroville. (The baseline values were generated by the linked economic component of the Economic-Fiscal Model.) For example, endogenous revenues sensitive to population changes were divided by baseline population levels for each jurisdiction. Similarly, endogenous revenues sensitive to sales changes were divided by baseline sales levels in each jurisdiction. This process resulted in the matrix of indirect revenue translators shown in Appendix A, Tables A-8 (Butte County) and Table A-21 (Oroville).

Each run of the economic component of the Economic-Fiscal Model produces vectors of changes in sales, earnings, employment, and population for each of the community models and for Butte County. The values in these vectors are driven by the direct impact inputs to the model, such as visitor or O&M spending. The outputs represent estimated changes from baseline levels. For each model run, the estimated changes in sales, earnings, employment, and or population are multiplied by the appropriate revenue translators in Appendix A, Tables A-8 and A-21 to produce estimates of revenue changes for Butte County and Oroville.

4.3.4 Development of Jurisdictional Models and Linkages to the Economic Component of the Economic-Fiscal Model

The cost and revenue translators described in Sections 4.3.2 and 4.3.3, respectively, were used to develop fiscal spreadsheet models for each of the jurisdictions. These fiscal models are linked to the related I-O components of the Economic-Fiscal Model. Detailed descriptions of the fiscal spreadsheet models, along with examples of the key worksheets composing the models, are provided in Appendix A, Fiscal Model Description. The linked I-O components of the Economic-Fiscal Model are described in the *Final Recreation Activity, Spending, and Associated Economic Impacts Report* (R-18).

The fiscal models generate estimates of fiscal impacts based on changes in visitation levels (as expressed in visitor days) and visitor spending. Relevant visitor spending estimates are input to each community-level economic model as direct impacts. The economic models then calculate the total impact (direct, induced, and indirect) of visitor spending, including total changes in sales (as expressed in dollars of total industrial output), earnings, employment, and population. These changes are linked to the relevant visitor-driven revenue translators and indirect (growth-related) cost translators in the fiscal models to generate changes in jurisdictional revenues and expenditures sensitive to changes in sales, earnings, and population. Additionally, relevant changes in visitation to the Oroville Facilities are input to the fiscal models, which link the visitation changes to the visitor-driven cost translators, generating estimates of visitor-driven costs for each jurisdiction.

4.4 DEVELOPMENT OF DIRECT INPUTS TO THE FISCAL IMPACT ASSESSMENT MODELS

Fiscal effects under current conditions were estimated based on current levels of visitation to the Oroville Facilities and on current levels of facilities O&M expenditures. Not all visitors to the Oroville Facilities would affect the costs and revenues of each

jurisdiction within the study area. For example, visitors coming from outside of Butte County would generate fiscal effects only on the jurisdictions through which they pass on the way to a specific recreation facility. Only unincorporated Butte County would be affected by all out-of-County visitors since all of these visitors would travel through County lands on County-maintained roads, potentially generating costs and revenues to the County of Butte. Based on recreation visitor survey data, the following percentages of total out-of-County visitors to the Oroville Facilities would affect each jurisdiction: County of Butte -100 percent, City of Oroville - 80 percent, City of Biggs - 20 percent, City of Gridley - 20 percent, City of Chico -15 percent, and Town of Paradise -10 percent.

For visitors to the Oroville Facilities who are residents of Butte County, only visitors who are non-residents of a specific jurisdiction would have a fiscal impact on that jurisdiction, since resident visitors would presumably generate costs to their jurisdiction of residence regardless of whether they visited a recreation facility on any given day. For example, a resident of unincorporated Butte County who travels to Lake Oroville to recreate would presumably generate no new costs to Butte County because that person would travel on County roads, potentially generating law enforcement and road maintenance costs to the County, regardless of what he or she did that day. From the City of Oroville's perspective, however, that recreationist could generate new costs and revenues for the City if he or she passes through Oroville on the way to Lake Oroville. To account for this effect, visitors to the Oroville Facilities originating from each modeling area within Butte County were assigned to residential locations based on the percentages of modeling area residents living in incorporated and unincorporated areas. With the exception of the Oroville Model Area, only non-residents of each modeling area were assumed to have a potential net fiscal impact on jurisdictions within the modeling area. For the Oroville Model Area, it was assumed that 50 percent of visitors originating from Oroville would have a new fiscal impact on Butte County. Similarly, it was assumed that 50 percent of visitors originating from the unincorporated portion of the Oroville Model Area would have a new fiscal impact on Oroville. The remaining 50 percent of resident visitors would presumably have an impact on each jurisdiction regardless of whether they visited a recreational facility on any given day.

These assumptions and calculations resulted in the allocation in Table 4.4-1 of the estimated 1,137,200 visitor days at the Oroville Facilities during FY 2002-03.

Table 4.4-1. Allocation of current (FY 2002-03) visitor days for assigning public service costs in the fiscal impact model.

Jurisdiction	Out-of-County Visitors Potentially Affecting Jurisdiction	In-County Visitors Potentially Affecting Jurisdiction	Total Visitors Potentially Affecting Jurisdiction
County of Butte	533,130	164,844	697,974
City of Biggs	106,626	14,765	121,391
City of Chico	79,970	35,524	115,494
City of Gridley	106,626	14,765	121,391
City of Oroville	426,504	266,727	693,231
Town of Paradise	53,313	19,616	72,929

Source: Derived from results presented in Existing Recreation Use *(R-9) study report and recreation survey results.*

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5.0 STUDY RESULTS AND DISCUSSION

Local fiscal effects primarily result from recreation activity and O&M of the Oroville Facilities. As recreation-related spending levels vary in relation to use, local tax revenues generated by retail sales, hotel and motel stays, fuel purchases, and other expenditures by visitors also change. Similarly, changes in visitation to the Oroville Facilities may generate increased demand for law enforcement, fire protection, and other governmental services such as roads, parks and recreation. The local population supported by O&M of the Oroville Facilities generates demands for public services and public revenues resulting from local economic activity.

The fiscal effects of two recreation-use conditions, including current levels of recreation use and projected future (2020) levels of recreation use of the Oroville Facilities, were evaluated using the fiscal impact assessment models described in the Section 4.0. In addition, the fiscal effects of current O&M activity at the Oroville Facilities were evaluated using the fiscal models.

Because the fiscal models are analytical tools that require many assumptions, changes in these assumptions to reflect different fiscal conditions could substantially change the results. Consequently, the following results should be viewed as only a snapshot of likely fiscal effects under current conditions and assumptions.

5.1 FISCAL EFFECTS OF CURRENT RECREATION ACTIVITY AND O&M EXPENDITURES

The following sections summarize the results of the fiscal impact analysis of current conditions for each jurisdiction. Effects are discussed separately for those effects generated directly and indirectly by recreation activities and those effects generated by O&M activities. Effects estimated by the Butte County fiscal model and Oroville fiscal model are presented in Tables 5.1-1, 5.1-2, and 5.1-3 for the County of Butte and the City of Oroville, and in Table 5.1-4 for the cities of Biggs, Chico, Gridley, and the Town of Paradise.

5.1.1 County of Butte

5.1.1.1 Recreation-Related Effects

Visitor-Driven Effects

For the County of Butte, visitors to the Oroville Facilities who do not reside in unincorporated Butte County (non-residents) generated an estimated $220,400 in tax revenues for the County in FY 2002-03, including $217,100 in sales tax revenue and $3,300 in lodging tax revenue (Table 5.1-1). During the same year, non-residents who recreated at the Oroville Facilities generated an estimated $369,900 in public service costs to the County of Butte, including $202,400 in fire protection/emergency services costs, $146,600 in law enforcement costs, and $20,900 in road maintenance costs

(Table 5.1-1). Thus, visitor-driven costs to the County exceeded revenues by an estimated $149,500 during FY 2002-03.

Table 5.1-1. Estimated current visitor-driven fiscal impacts on the County of Butte and the City of Oroville of recreation use of the Oroville Facilities (in $1,000).

Budget Category	County of Butte	City of Oroville
Revenues:		
Sales tax	$217.1	$440.0
Lodging tax	$3.3	$91.9
TOTAL	**$220.4**	**$531.9**
Expenditures:		
Fire protection	$202.4	$117.8
Law enforcement	$146.6	$48.5
Road maintenance	$20.9	$41.6
TOTAL	**$369.9**	**$207.9**
Net fiscal impact	*-$149.5*	*$324.0*

Source: Results from simulating the fiscal impact assessment models under current conditions.

Indirect (Growth-Related) Effects

In FY 2002-03, the economic activity and population indirectly supported by visitor expenditures generated an estimated $415,800 in revenues for the County of Butte, including an estimated $97,400 in property tax revenue (Table 5.1-2). Additionally, the population indirectly supported by visitor spending generated an estimated $655,900 in costs to the County, including $334,900 in sheriff, court, and detention costs. For the County, indirect costs exceeded revenues by and estimated $240,100 in FY 2002-03.

Table 5.1-2. Estimated current indirect fiscal impacts on the County of Butte and the City of Oroville of recreation use of the Oroville Facilities (in $1,000).

Budget Category	County of Butte	City of Oroville
Revenues:		
Property tax	$97.4	$10.7
Other	$318.4	$131.7
TOTAL	**$415.8**	**$142.4**
Expenditures:		
Fire protection	$81.2	$38.6
Law enforcement	$334.9	$63.4
Road maintenance	$108.1	$31.4
Other	$131.7	$176.8
TOTAL	**$655.9**	**$310.2**
Net fiscal impact	*-$240.1*	*-$167.8*

Source: Results from simulating the fiscal impact assessment models under current conditions.

5.1.1.2 Facilities Operations and Maintenance Effects

The O&M of the Oroville Facilities by State agencies for the Oroville Facilities generated an estimated $331,100 in revenues to the County of Butte in FY 2002-03 (Table 5.1-3). Most of these revenues are generated directly and indirectly by the County population

attributable to State employment, including $104,200 in property tax revenue. Providing governmental services to the population directly and indirectly supported by O&M activities at the Oroville Facilities cost the County of Butte an estimated $447,300 in FY 2002-03. A large portion of the costs ($228,300) are attributable to law enforcement, court, and detention expenditures (Table 5.1-3). During FY 2002-03, expenditures by the County of Butte attributable to O&M activities exceeded revenues by an estimated $114,200 (Table 5.1-3). This annual deficit reflects the inability of sales tax revenues generated by O&M expenditures and other revenues generated by the population supported by these expenditures to offset the costs to the County of providing services to these residents.

Table 5.1-3. Estimated fiscal impacts on the County of Butte and the City of Oroville of recreation use of current O&M of the Oroville Facilities (in $1,000).

Budget Category	County of Butte	City of Oroville
Revenues:		
Sales tax	$32.9	$24.3
Lodging tax	$0.2	$4.1
Property tax	$104.2	$11.7
Other	$195.8	$71.4
TOTAL	**$331.1**	**$111.5**
Expenditures:		
Fire protection	$55.3	$24.4
Law enforcement	$228.3	$40.1
Road maintenance	$73.7	$20.2
Other	$90.0	$113.6
TOTAL	**$447.3**	**$198.3**
Net fiscal impact	*-$114.2*	*-$86.8*

Source: Results from simulating the fiscal impact assessment models under current conditions.

5.1.2 City of Oroville

5.1.2.1 Recreation-Related Effects

Visitor-Driven Effects

For the City of Oroville, the spending by visitors to the Oroville Facilities who do not reside in the City of Oroville (non-residents) generated an estimated $531,900 in tax revenues for the City in FY 2002-03, including $440,000 in sales tax revenue and $91,900 in lodging tax revenue (Table 5.1-1). On the expenditure side, non-residents of the City of Oroville who recreated at the Oroville Facilities and who either passed through or stayed in Oroville incurred an estimated $207,900 in public service costs to the City of Oroville, including $117,800 in fire protection/emergency services costs, $48,500 in law enforcement costs, and $41,600 in road maintenance costs. Thus, direct visitor activities generated a revenue surplus estimated at $324,000 for the City of Oroville in FY 2002-03 (Table 5.2-1). This surplus is primarily because businesses in Oroville capture a large percentage of total purchases by non-residents of the City of Oroville who visited the Oroville Facilities.

Indirect (Growth-Related) Effects

In FY 2002-03, the economic activity and population indirectly supported by visitor spending generated an estimated $142,400 in revenues for the City of Oroville, including an estimated $10,700 in property tax revenue (Table 5.1-2). The population indirectly supported by visitor spending incurred an estimated $310,200 in public service costs to the City, including $63,400 in police costs (Table 5.1-2). The indirect effects of visitor activities are estimated to result in a net deficit of $167,800 for the City of Oroville.

5.1.2.2 Facilities Operations and Maintenance Effects

The O&M of the Oroville Facilities by State agencies generated an estimated $111,500 in revenues to the City of Oroville in FY 2002-03 (Table 5.1-3). Most of these revenues are generated directly and indirectly by the City population attributable to State employment, including $71,400 in other revenue (i.e., non-sales, non-property, and non-lodging tax revenue). Providing services to the population directly and indirectly supported by O&M activities at the Oroville Facilities incurred governmental costs to the City of Oroville of an estimated $198,300 in FY 2002-03. A portion of the costs ($40,100) are attributable to police department expenditures (Table 5.1-3).

During FY 2002-03, governmental expenditures by the City of Oroville attributable to O&M activities at the Oroville Facilities exceeded revenues by an estimated $86,800 (Table 5.1-3). This annual deficit reflects the inability of sales tax revenues generated by O&M expenditures and other revenues generated by the population supported by O&M activities to offset the costs to the City of providing governmental services to these residents.

5.1.3 Other Cities

As discussed previously in Section 4.1, General Approach, the fiscal impact assessment for Biggs, Chico, Gridley, and Paradise was designed to focus solely on those governmental costs and revenues most sensitive to recreation activity associated with the Oroville Facilities. In essence, only direct visitor-driven and O&M-driven fire protection, law enforcement, and road maintenance costs and sales and lodging tax revenues are estimated by the fiscal impact models for these communities. Because the models for Biggs, Chico, Gridley, and Paradise do not address indirect costs and revenues of recreation activity, the costs and revenues generated by the models cannot be compared to determine the overall net fiscal effects for each community. Instead, estimates of direct (visitor-driven) costs and revenues are presented to provide insight on the effects in the communities generated by visitors to the Oroville Facilities.

5.1.3.1 Visitor Effects

City of Biggs

Fiscal impacts on the City of Biggs related to non-resident visitor activities are relatively minor. Sales tax revenue generated by visitor spending was estimated to total about $400 in FY 2002-03 (Table 5.1-4). Expenditures by the City on public services required by non-resident visitors were estimated to total about $800, including about $500 in law enforcement costs.

City of Chico

With its larger retail and lodging sector, Chico experiences more non-resident activity related to recreation at the Oroville Facilities than does Biggs, Gridley, or Paradise. Chico's visitor-driven revenues attributable to recreation activity at the Oroville Facilities were estimated to total $44,800 in FY 2002-03, including $38,700 in sales tax revenue (Table 5.1-4). The City incurred an estimated $61,900 in fire protection, law enforcement, and road maintenance costs to accommodate non-resident visitors, with policing costs accounting for more than half of the costs.

City of Gridley

Similar to fiscal effects on Biggs, effects on the City of Gridley resulting from non-resident visitor activities are relatively minor. Revenues generated by sales and lodging taxes were estimated to total $19,800 during FY 2002-03, including $16,200 in sales tax revenue (Table 5.1-4). Conversely, governmental expenditures by the City for fire protection, law enforcement, and road maintenance services for non-resident visitor activity were estimated to total $8,300.

Town of Paradise

For the Town of Paradise, visitor-driven fiscal effects are estimated to be small, falling between those for Gridley and Chico. Sales and lodging tax revenues generated for the town by non-resident visitors who recreated at the Oroville Facilities were estimated to total $24,300 in FY 2002-03, compared to an estimated $21,800 in expenditures in fire protection, law enforcement, and road maintenance services for non-resident visitors (Table 5.1-4).

Table 5.1-4. Estimated current fiscal impacts on the cities of Biggs, Chico, Gridley, and Paradise of recreation use and O&M of the Oroville Facilities (in $1,000).

Jurisdiction	Visitor-Driven Effects	Facilities Operations & Maintenance Effects
City of Biggs Revenues:		
Sales tax	$0.4	$0.1
Lodging tax	$0.0	$0.0
Property tax	$0.0	$0.3
TOTAL	**$0.4**	**$0.4**
City of Biggs Expenditures:		
Fire protection	$0.1	$0.0
Law enforcement	$0.5	$0.5
Road maintenance	$0.2	$0.2
TOTAL	**$0.8**	**$0.7**
City of Chico Revenues:		
Sales tax	$38.7	$19.0
Lodging tax	$6.1	$2.7
Property tax	$0.0	$5.8
TOTAL	**$44.8**	**$27.5**
City of Chico Expenditures:		
Fire protection	$21.1	$17.6
Law enforcement	$32.4	$27.1
Road maintenance	$8.4	$7.0
TOTAL	**$61.9**	**$51.7**
City of Gridley Revenues:		
Sales tax	$16.2	$1.3
Lodging tax	$3.7	$0.1
Property tax	$0.0	$1.3
TOTAL	**$19.9**	**$2.7**
City of Gridley Expenditures:		
Fire protection	$1.5	$1.5
Law enforcement	$5.8	$5.8
Road maintenance	$1.0	$1.0
TOTAL	**$8.3**	**$8.3**
Town of Paradise Revenues:		
Sales tax	$17.9	$2.8
Lodging tax	$6.4	$0.1
Property tax	$0.0	$14.5
TOTAL	**$24.3**	**$17.4**
Town of Paradise Expenditures:		
Fire protection	$8.6	$10.8
Law enforcement	$10.0	$12.4
Road maintenance	$3.2	$4.0
TOTAL	**$21.8**	**$27.2**

Source: Results from simulating the fiscal impact assessment models under current conditions.

5.1.3.2 Facilities Operations and Maintenance Effects

City of Biggs

O&M activities at the Oroville Facilities have little effect on the City of Biggs. Sales and property tax revenues generated by O&M expenditures were estimated to total about $400, while governmental expenditures for fire protection, law enforcement, and road maintenance were estimated to total about $700 during FY 2002-03 (Table 5.1-4).

City of Chico

With its more diversified economy, the City of Chico experiences larger fiscal effects from O&M activities at the Oroville Facilities than Biggs, Gridley, and Paradise. Chico's O&M-driven revenues were estimated to total $27,500 in FY 2002-03, including $19,000 in sales tax revenue (Table 5.1-4). The City incurred an estimated $51,700 in fire protection, law enforcement, and road maintenance costs to serve the population supported by the jobs generated by O&M activities.

City of Gridley

Similar to fiscal effects on Biggs, effects on Gridley resulting from O&M activities at the Oroville Facilities are relatively minor. Revenues generated by sales, lodging, and property taxes were estimated to total $2,700 during FY 2002-03 (Table 5.1-4). Expenditures by the City for fire protection, law enforcement, and road maintenance were estimated to total $8,300.

Town of Paradise

For the Town of Paradise, O&M-driven fiscal effects are relatively small. Sales, lodging, and property tax revenues generated for the town by O&M activities at the Oroville Facilities were estimated to total $17,400 in FY 2002-03, compared to an estimated $27,200 in expenditures for fire protection, law enforcement, and road maintenance services (Table 5.1-4).

5.1.4 Recreation and Park Districts

Recreation and park districts near the LOSRA could be affected by current or future levels of recreational use of the Oroville Facilities or by population growth indirectly supported by recreation- and operations-related spending. Based on proximity to the LOSRA, potentially affected districts include the FRRPD and the Paradise Recreation and Park District (PRPD). Potential effects on these districts are discussed in the following sections.

5.1.4.1 Feather River Recreation and Park District

The boundary of the FRRPD encompasses Lake Oroville and much of the LOSRA, although District and LOSRA recreation sites are independently managed and operated. The FRRPD provides a variety of park and recreation services to the estimated 48,500 persons residing within the portion of southeast Butte County within the District's 700 square miles (pers. comm., Lawrence 2003).

The FRRPD primarily provides recreation facilities and services to local residents, including those in Oroville. Existing parklands are largely developed for neighborhood and community users. No campground facilities or other regional-type facilities are provided by the District, limiting the number of park and program users drawn from outside the local area. At this time, the District is in the process of developing additional facilities in Riverbend Park, which currently provides a bike path along the Feather River, a disc golf course, picnic areas, and a boat ramp. Over the next few years, the District plans to further develop Riverbend Park by undertaking additional landscaping and by providing additional parking, boat ramps, group picnic areas, and other facilities. The improvements will emphasize the park's natural setting along the river, with recreation facilities clustered in designated areas. These improvements may attract more regional recreationists, particularly salmon and steelhead anglers seeking access to the Feather River (pers. comm., Lawrence 2003).

The budget of the FRRPD totaled approximately $1.7 million in FY 2001-02 (Butte County Auditor Controller 2003). The District's expenditures exceeded its revenues by approximately $245,500, requiring carryover funds to be used to balance the budget. The District relies heavily on property tax revenues and program and facilities fees to fund its ongoing operations. Although the District charges for some of its programs and for the rental of some of its facilities, the District currently does not levy user fees for the use of its park and recreation facilities (pers. comm. Lawrence 2003). Property tax revenues provided approximately 59 percent of its revenues during FY 2001-02. Program and facility rental fees provided an additional 15 percent of total revenues. The FRRPD also receives revenue that is not tied to the District's tax base or use of its facilities, including $318,000 in State aid. Operational costs are primarily tied to personnel, service, and supply costs, which account for 75 percent of total District costs.

At the beginning of FY 2002-03, the District implemented a fixed-parcel tax on developed properties within its district boundaries to help fund recreation and park services. The tax is $10.15 per single-family residential unit and varies for other types of developed land uses. The District received approximately $165,000 in fixed-parcel tax revenue during FY 2002-03 (pers. comm., Lawrence 2004).

According to the general manager of the FRRPD, use of the LOSRA and operations of the Oroville Facilities have had little effect on use of FRRPD facilities, thereby resulting in little or no direct effect on District costs and revenues. The LOSRA facilities do not directly compete with the District's facilities, and out-of-region users of LOSRA facilities typically do not use the District's facilities. In general, the Oroville Facilities tend to draw

a different type of recreationist (e.g., campers and reservoir-oriented boaters) than do the District's recreational facilities. No direct effects on the FRRPD's fiscal conditions are anticipated to result from changes in future use or operations of Oroville Facilities (pers. comm., Lawrence 2003).

To the extent that the use and operation of LOSRA facilities stimulate the local economy, create jobs, and generate local population growth, the use and operation of facilities could indirectly affect the demand for and use of FRRPD facilities and programs by affecting the size of the District's service area population. Costs to the District for providing recreation programs and operating and maintaining recreation facilities are sensitive to the size of the service area population. Similarly, revenues generated by program and facility rental fees and by the value of the District's property tax base are directly and indirectly sensitive to population levels and economic growth. Additionally, the District's fixed-parcel tax revenues are sensitive to growth, as expressed by population levels, within the District.

On the expenditure side of the FRRPD's budget, expenditures made to provide recreation programs and to maintain recreation facilities, including personnel, services, and supply costs, totaled approximately $1,267,400 in FY 2001-02. Based on a District-wide population of 48,500, per capita costs totaled an estimated $26.13 during FY 2001-02.

On the revenue side of the District's budget, charges for current services are driven by the demand for the District's programs and facilities, which, in turn, is largely driven by population levels. Charges for current services totaled $213,600 in FY 2001-02, indicating per capita revenues of $4.40. The District's property tax revenues, which are driven by the value of the property tax base within the District's boundary, totaled approximately $852,800 in FY 2001-02, including $21,900 in prior year assessments. The FRRPD receives an average of $0.47 per $1,000 of assessed value within the District. These revenues do not reflect the fixed-parcel tax implemented by the District in 2003, which generated $165,000 in revenue during FY 2002-03.

Based on current visitation and O&M activities related to the Oroville Facilities, the population within the Oroville Model Area that is supported by these activities totals an estimated 1,879. This suggests, based on current per capita costs, that current expenditures by the FRRPD to provide services to this population total about $49,100. Similarly, this population currently generates an estimated $8,300 in charges for current services. Based on the estimated assessed value of property in the Oroville Model Area attributable to economic activity associated with the current use and O&M of the Oroville Facilities, current property tax revenues for the FRRPD generated by these activities total an estimated $8,300. Assuming the population supported by visitation and O&M activities occupies single-family residences, this population currently generates an estimated $7,500 in fixed-parcel tax revenue.

In summary, the FRRPD currently expends an estimated $49,100 and receives an estimated $24,100 associated with the population in its service area supported by

activities related to the Oroville Facilities. The $25,000 deficit reflects the reality facing the District that much of its current operations is being funded by State funds and carryover funds.

5.1.4.2 Paradise Recreation and Park District

The northern boundary of the LOSRA abuts the southern boundary of the PRPD (pers. comm., Lucas 2002). The PRPD is an independent special District serving approximately 50,000 people. The District covers 165 square miles, encompassing the communities of Paradise, Paradise Pines, Butte Creek Canyon, and Concow. The District maintains 73 acres of developed parkland and 358 acres of natural open space (Paradise Recreation and Park District 2003).

During FY 1999-2000, the PRPD received approximately $1.2 million in revenues. Most of the District's revenues come from property taxes (67 percent) and charges for current services (24 percent). District expenditures are primarily made for salaries and employee benefits (63 percent), with about 21 percent for services and supplies (State Controller's Office 2003c).

According to the PRPD's manager, Lake Oroville and its recreational facilities have had a negligible effect on levels of use of the District's facilities, and, by extension, have had little effect on the District's expenditures and revenues. Although the LOSRA recreational facilities provide increased recreational opportunities for residents of the District, the LOSRA facilities do not directly compete with the District's facilities, nor do recreationists attracted to LOSRA facilities typically use the District's facilities. In general, the Oroville Facilities tend to draw a different type of recreationist (e.g., campers and boaters) than do the District's recreational facilities. Additionally, Lake Oroville's developed recreation sites are far enough away from the District's facilities that little overlap in use occurs. The recent development of recreational facilities, including a campground at Lime Saddle, the nearest developed LOSRA site to Paradise, have had little or no effect on use of PRPD facilities or programs. Similarly, future improvements to LOSRA facilities and changes in use of facilities are not anticipated to have a significant effect on the District's facilities or operations. No substantial direct or indirect fiscal impacts resulting from current or future use of LOSRA facilities are anticipated (pers. comm., Trinca 2003). As a result, no fiscal effects under current or future conditions have been estimated for the District.

5.2 FISCAL EFFECTS OF PROJECTED FUTURE RECREATION ACTIVITY

Fiscal effects generated by recreation use of the Oroville Facilities were evaluated based on recreation use levels projected to 2020. Projections of recreation use were developed based on consideration of projected population growth and recreation activity trends, as described in the Relicensing Study R-12 – *Projected Recreation Use*.

5.2.1 County of Butte

For the County of Butte, the fiscal impact analysis reveals that public service expenditures generated by visitors to the Oroville Facilities would exceed revenues under projected future conditions, resulting in an overall annual deficit projected at $189,600 (Table 5.2-1). The indirect effects of providing public services to the population supported by visitor spending and subsequent economic activity generated by this spending also are estimated to result in a deficit, with costs exceeding revenues by a projected $303,200 in 2020 (Table 5.2-2).

Table 5.2-1. Estimates of visitor-driven fiscal impacts on the County of Butte and the City of Oroville of recreation use of the Oroville Facilities in 2020 (in $1,000).

Budget Category	County of Butte	City of Oroville
Revenues:		
Sales tax	$275.4	$559.5
Lodging tax	$4.1	$113.7
TOTAL	**$279.5**	**$673.2**
Expenditures:		
Fire protection	$256.7	$149.6
Law enforcement	$185.9	$61.6
Road maintenance	$26.5	$52.8
TOTAL	**$469.1**	**$264.0**
Net fiscal impact	*-$189.6*	*$409.2*

Source: Results from simulating the fiscal impact assessment models under projected future conditions.

Table 5.2-2. Estimates of indirect fiscal impacts on the County of Butte and the City of Oroville of recreation use of the Oroville Facilities in 2020 (in $1,000).

Budget Category	County of Butte	City of Oroville
Revenues:		
Property tax	$123.2	$13.5
Other	$402.8	$166.7
TOTAL	**$526.0**	**$180.2**
Expenditures:		
Fire protection	$102.6	$48.8
Law enforcement	$423.4	$80.2
Road maintenance	$136.7	$39.7
Other	$166.5	$223.5
TOTAL	**$829.2**	**$392.2**
Net fiscal impact	*-$303.2*	*-$212.0*

Source: Results from simulating the fiscal impact assessment models under projected future conditions.

5.2.2 City of Oroville

Under projected future (2020) conditions, direct visitor-driven revenues received by the City of Oroville are projected to exceed visitor-driven costs by $409,200 (Table 5.2-1). Offsetting part of this surplus, indirect (growth-related) effects are projected to result in a deficit of $212,000. The net result of visitor-driven and indirect effects is a projected fiscal surplus to the City of Oroville of $197,200 (Table 5.2-2).

5.2.3 Other Jurisdictions

Similar to effects under current conditions, fiscal effects on the cities of Biggs, Chico, Gridley, and Paradise are projected to be relatively small under projected future (2020) conditions. Visitor-driven costs are projected to range from $900 in Biggs to $78,300 in Chico (Table 5.2-3). Visitor-driven revenues are projected to range from $400 in Biggs to $56,400 in Chico.

5.2.4 Recreation and Park Districts

Under projected future (2020) conditions, the population supported by visitor spending and subsequent economic activity generated by this spending would create an increased demand for services from the FRRPD. Based on a projected population increase of 1,455 in the Oroville Model Area under projected future (2020) conditions, costs to the District are estimated to increase by $38,000, while revenues are estimated to increase by $16,800. These changes would result in a net annual deficit to the District of $21,200.

Table 5.2-3. Estimates of visitor-driven fiscal impacts on the cities of Biggs, Chico, Gridley, and Paradise of projected recreation use of the Oroville Facilities in 2020 (in $1,000).

Jurisdiction	Visitor-Driven Effects
City of Biggs Revenues:	
Sales tax	$0.4
Lodging tax	$0.0
TOTAL	**$0.4**
City of Biggs Expenditures:	
Fire protection	$0.0
Law enforcement	$0.7
Road maintenance	$0.2
TOTAL	**$0.9**
City of Chico Revenues:	
Sales tax	$48.8
Lodging tax	$7.6
TOTAL	**$56.4**
City of Chico Expenditures:	
Fire protection	$26.7
Law enforcement	$41.0
Road maintenance	$10.6
TOTAL	**$78.3**
City of Gridley Revenues:	
Sales tax	$19.5
Lodging tax	$4.4
TOTAL	**$23.9**
City of Gridley Expenditures:	
Fire protection	$1.8
Law enforcement	$7.1
Road maintenance	$1.2
TOTAL	**$10.1**
Town of Paradise Revenues:	
Sales tax	$23.1
Lodging tax	$8.2
TOTAL	**$31.3**
Town of Paradise Expenditures:	
Fire protection	$11.1
Law enforcement	$12.8
Road maintenance	$4.1
TOTAL	**$28.0**

Source: Results from simulating the fiscal impact assessment models under projected future conditions.

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6.0 CONCLUSIONS

In fulfilling the need for a fiscal impact study, as described in Section 2.0, this report provides an assessment of local government fiscal impacts resulting from recreation and O&M activities associated with the Oroville Facilities. The results and conclusions of this report will help DWR and the relicensing collaborative evaluate potential resource actions and to meet FERC's direction regarding preparation of a comprehensive recreation plan.

The primary objective of this fiscal study was to estimate the effects of economic activity generated by current and projected recreation use and by O&M of the Oroville Facilities on sales tax revenues, lodging tax revenues, and other tax revenues of local governments, and on local public service costs related to recreation and O&M activities at the Oroville Facilities. A secondary objective of the study was to gain a better understanding of the relationship between the level of recreational use in the Oroville Facilities and resulting levels of public revenues and costs generated for local agencies. This understanding provides an analytical framework for effective recreation development strategies for potentially enhancing fiscal conditions for local governments.

The conclusions of the analysis of fiscal impacts on local governments discussed in the following sections were drawn from the results presented in Section 5.0 – Study Results and Discussion. This report was prepared under the general direction of DWR staff. Opinions, findings, and conclusions expressed in this report are those of the authors. This report does not express the official position of DWR unless specifically approved by the Director or his designee.

6.1 EFFECTS OF CURRENT RECREATION ACTIVITY AND O&M EXPENDITURES

6.1.1 County of Butte

For the County of Butte, the fiscal impact analysis reveals that visitor-driven public service expenditures by the County are estimated to exceed visitor-driven revenues by $149,500 under current conditions, representing 0.1 percent of the County's FY 2002-03 general fund and less than 0.1 percent of its overall budget. This deficit can be explained by two factors. First, Butte County is losing substantial amounts of potential sales and lodging tax revenues to the City of Oroville because most of the retail stores and motels near the recreation facilities are located within incorporated Oroville. The City of Oroville, therefore, receives much greater fiscal benefits from visitor purchases than Butte County. As Table 5.1-1 shows, Oroville receives more than twice as much sales tax revenue from visitor expenditures than Butte County. Similarly, Oroville receives virtually all of the lodging tax revenue directly generated by visitors to the Oroville Facilities. If the sales and lodging tax revenues were equally divided between the two jurisdictions, the County of Butte would receive an additional $156,000 in revenue, more than offsetting visitor-driven public service expenditures.

The second factor contributing to Butte County's estimated deficit is relatively high public service costs for serving visitors. Most of the recreation sites connected to the

Oroville Facilities are located in unincorporated Butte County, requiring the County to take on a relatively greater burden than the City of Oroville of providing fire protection/emergency services and law enforcement services to visitors.

The indirect fiscal impacts, which are driven by the portion of the County population indirectly supported by recreation visitor spending, also are estimated to be negative for Butte County, with expenditures exceeding revenues by an estimated $240,100, or 0.2 percent of the County's FY 2002-03 general fund and less than 0.1 percent of its overall budget. Again, two factors primarily account for this deficit. The most significant factor relates to structural problems with the County's overall budget and its reliance on State funding sources, difficulties that face most counties in California. For many public services, Butte County provides services to everyone living within the County, not just to those who reside in the unincorporated areas of the County. Examples of services provided to Countywide residents include court and detention costs. The mandate to provide services Countywide generates governmental costs that are not necessarily offset by public revenues that are generated primarily by residents of the unincorporated areas, who account for about half of the Countywide population.

Most revenues transferred to the County by the State and Federal governments to offset the costs of providing many State-mandated countywide services do not necessarily change in response to population growth, resulting in net costs to the County when the countywide population expands. To reflect this situation, the fiscal impact assessment model holds State and Federal revenue transfers constant for several mandated services, whereas the model allows the costs to the County of these services to change in relationship to the population indirectly generated by visitor spending. These partially funded mandates result in fiscal deficits, especially when viewed in the narrow context of the population supported indirectly by recreation activity associated with the Oroville Facilities. Additionally, the constraints placed on Federal and State revenue transfers by the fiscal impact assessment model likely results in the model understating revenue transfers attributable to the portion of the County population indirectly supported by recreation visitor spending. Sensitivity analysis conducted to evaluate this potential modeling limitation found that allowing 5 percent of Federal revenue transfers and 20 percent of State revenue transfers to be population sensitive would result in balanced indirect costs and revenues.

The second factor explaining the indirect deficit to the County relates to the generally accepted notion in California that, in a fiscal sense, residential development does not pay for itself; commercial and industrial development is usually needed to provide revenues to offset the costs of serving the resident population. The fiscal impact assessment model does not account for the beneficial fiscal effects, such as expansion of industry, that may be secondarily related to the population supported by visitor spending. The model results may, therefore, present a somewhat unbalanced view of indirect effects, overstating the indirect deficit resulting from visitor activities.

The factors discussed above likely also partially explain why current O&M activities, which directly and indirectly generate population within the County, are estimated to

result in a fiscal deficit of $114,200 for the County. An additional factor affecting O&M effects is that only a small portion of State O&M expenditures are made for goods and services subject to sales taxes. Only 5 percent of O&M expenditures in the State government sector generates sales tax revenues. Thus, revenues generated by O&M activities tend to lag the costs of providing services to the population supported by these activities.

6.1.2 City of Oroville

For the City of Oroville, visitor-driven fiscal effects are the mirror image of fiscal impacts on Butte County. Whereas Butte County does not greatly benefit from potential visitor-related sales and lodging tax revenues because of its weak retail and lodging sector, the City of Oroville gains substantial tax revenues because of its ability to capture a large share of purchases by persons recreating at the Oroville Facilities. Oroville's visitor-driven revenues are estimated to be nearly two-and-a-half times larger than Butte County's revenues. On the cost side, the City of Oroville currently expends a large amount to provide public services to visitors. These expenditures, however, are lower than public services expenditures made by Butte County to accommodate visitors. The net annual result is that Oroville's visitor-driven revenues exceed its expenditures by an estimated $324,000 (Table 5.1-1). This surplus represents approximately 4.3 percent of Oroville's FY 2002-03 general fund budget.

This relatively large visitor-driven surplus is partially offset by a combined deficit of $254,600 in population-driven effects related to both recreation and O&M activities at the Oroville Facilities, representing 3.4 percent of Oroville's general fund budget (Tables 5.1-2 and 5.1-3). As discussed previously for Butte County, residential growth unaccompanied by commercial and industrial growth usually results in deficits for local governments. Additionally, O&M expenditures generate relatively small amounts of sales tax revenue for local governments. Because the fiscal impact assessment model does not capture all of the beneficial fiscal effects of commercial and industrial development supported by the population growth attributable to recreation and O&M activities, the City of Oroville's deficit related to population growth and O&M effects may be overstated. Additionally, as discussed previously for Butte County, the fiscal impact assessment model likely understate State and Federal revenue transfers, which may account for a portion of the deficit attributable to population-driven effects related to both visitation and O&M activities.

6.1.3 Other Cities

The fiscal effects on Biggs, Chico, Gridley, and Paradise of current recreation use and O&M of the Oroville Facilities are estimated to be relatively minor. Only Chico appears to experience relatively large fiscal effects from recreation use and O&M of the Oroville Facilities, with a combined $113,600 in fire protection, law enforcement, and road maintenance costs, and $72,300 in sales, lodging, and property tax revenues (Table 5.1-4). The Town of Paradise is estimated to incur combined public services costs totaling $49,000 and revenues totaling $41,700 under current conditions. For Gridley and Biggs, costs and revenues are estimated to be minor (Table 5.1-4).

6.1.4 Recreation and Park Districts

To the extent that the recreation use and O&M of the Oroville Facilities stimulate the local economy, create jobs, and generate local population growth, the current use and O&M of the Oroville Facilities could indirectly affect the demand for and use of FRRPD facilities and programs by affecting the size of the District's service area population. Based on the estimated size of the service area population supported by visitor spending and O&M expenditures, the FRRPD currently expends an estimated $49,100 and receives an estimated $24,100 in revenue associated with this population. The resulting $25,000 deficit reflects the reality facing the District that much of its current operations is being funded by State funds and carryover funds. Additionally, charges for programs and services provided by the District do not fully offset the costs of these programs and services.

6.2 EFFECTS OF PROJECTED FUTURE RECREATION ACTIVITY

6.2.1 County of Butte

For the County of Butte, the fiscal impact analysis reveals that public service expenditures generated by use of Oroville Facilities are projected to exceed revenues under future (2020) conditions. This deficit is estimated to be 26 percent larger (an increase of about $101,000) than the estimated deficit under current conditions. The reasons for this deficit are similar to those described previously for the County of Butte under current conditions.

6.2.2 City of Oroville

Under projected future (2020) conditions, the overall annual fiscal impact on the City of Oroville of use of the Oroville Facilities is estimated to be beneficial, with the surplus projected to be about 26 percent larger (an increase of about $41,000) than under current use conditions. The reasons for this surplus are similar to those described previously for the City of Oroville under current conditions.

6.2.3 Other Cities

The fiscal effects on Biggs, Chico, Gridley, and Paradise of projected future (2020) use of the Oroville Facilities are estimated to be larger than under current use conditions but are still relatively minor. Only Chico is expected to experience relatively large fiscal effects from visitors to the Oroville Facilities passing through or staying in Chico.

6.2.4 Recreation and Park Districts

As discussed for current conditions, the projected future (2020) use of Oroville Facilities would stimulate the local economy, creating jobs and generating local population growth. The growth would indirectly affect the demand for and use of FRRPD facilities and programs by affecting the size of the District's service area population. Based on the projected size of the service area population supported by visitor expenditures under projected future conditions, the FRRPD is estimated to experience a deficit of $21,200 associated with this population. The reasons for this expected deficit are the same as those discussed previously for the FRRPD under current conditions.

7.0 REFERENCES

7.1 PUBLISHED REFERENCES

Butte County Auditor-Controller. 2003. Special Districts Financial Transactions Report for the Fiscal Year Ended June 30, 2002: Feather River Recreation and Park District. Prepared for the State Controller's Office, Sacramento, CA. Oroville, CA.

California Department of Finance. 2003. E-1 City/County Population Estimates, with Annual Percent Change, January 1, 2002 and 2003. Sacramento, CA.

Center for Economic Development. 2002. 2002 Economic and Demographic Profile. California State University, Chico, CA.

City of Biggs. 2002. 2002/2003 Budget, City of Biggs. Biggs, CA.

City of Chico. 2002. 2002-2003 Final Annual Budgets, City of Chico and Chico Redevelopment Agency. Chico, CA.

City of Gridley. 2002. City of Gridley Working Budget 2002-2003. Gridley, CA.

City of Oroville. 2002. City of Oroville, Oroville Redevelopment Agency, Oroville Public Financing Authority Adopted Budget 2001 and 2002-2003. Oroville, CA.

County of Butte. 2002. Butte County 2002/03 Final Budget. Oroville, CA.

DWR (Department of Water Resources) and DFG (Department of Fish and Game). 1993. Agreement Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish & Wildlife.

Minnesota IMPLAN Group, Inc. 2002. Year 2000 IMPLAN Model Zip Code-Level Data Base for Butte County. Stillwater, MN.

Paradise Park and Recreation District. 2003. Paradise Park and Recreation District Web site. www.paradiseprpd.com. Accessed August 27, 2003.

Revenue & Cost Specialists. 2002. Cost of Services Study for the City of Oroville. Prepared for the City of Oroville, Oroville, CA. Fullerton, CA.

State Controller's Office. 2002a. Cities Annual Report – Fiscal Year 1999-00. Sacramento, CA.

State Controller's Office. 2002b. Counties Annual Report – Fiscal Year 1999-00. Sacramento, CA.

State Controller's Office. 2003a. Cities Annual Report – Fiscal Year 2000-01. Sacramento, CA.

State Controller's Office. 2003b. Counties Annual Report – Fiscal Year 2000-01. Sacramento, CA.

State Controller's Office. 2003c. Special Districts Annual Report, Fiscal Year 1999-00. Sacramento, CA.

Town of Paradise. 2002. Town of Paradise – Annual Budget 2002-2003. Paradise, CA.

7.2 PERSONAL COMMUNICATIONS

Boulant, Michael. Public Works Manager. City of Oroville Public Works Department, Oroville, CA. April 15, 2003 - meeting.

Brown, Mitchel. Chief of Police. City of Oroville Police Department, Oroville, CA. April 15, 2003 - meeting.

Crump, Mike. Director of Public Works. Butte County Department of Public Works, Oroville, CA. April 24, 2003 - meeting.

Duran, Ruben. City Administrator. City of Oroville, Oroville, CA. February 2003 - meeting.

Edell, Stuart, P.E. Manager – Land Development Division, Deputy County Surveyor. Butte County Department of Public Works, Oroville, CA. April 24, 2003 - meeting.

Fowler, Russ. Battalion Chief. California Department of Forestry and Fire Protection - Butte County Fire, Oroville, CA. April 24, 2003 - meeting.

Gibbons, Felicia. Assistant Civil Engineer. City of Oroville Public Works Department, Oroville, CA. April 15, 2003 - meeting.

Hayes, Tom. Senior Planner. City of Chico, Chico, CA. February 2003 - meeting.

Ivey, Dennis. Assistant Town Manager. Town of Paradise, Paradise, CA. February 2003 - meeting.

Kastner, A., Hatchery Manager, Feather River Fish Hatchery, California Department of Fish and Game; personal communication with I. Ferguson, Environmental Analyst, EDAW, San Francisco, CA; July 2003.

Koehler, Lisa. Staff Services Analyst. California Department of Forestry and Fire Protection - Butte County Fire, Oroville, CA. April 24, 2003 – meeting, April 29 – e-mail communication.

Lawrence, Scott. General Manager. Feather River Recreation and Park District, Oroville, CA. August 29, 2003 and April 27, 2004 - telephone conversation.

Lucas, Stephen. Senior Planner. Butte County Local Agency Formation Commission, Oroville, CA. October 29, 2002 - telephone conversation.

Nickelson, John. Lieutenant. City of Oroville Police Department, Oroville, CA. April 15, 2003 - meeting.

Phillips, Warner. Assistant Director of Public Works. Butte County Public Works Department, Oroville, CA. April 24, 2003 - meeting.

Pittman, David. Fire Chief. City of Oroville Fire-Rescue Department, Oroville, CA. April 15, 2003 - meeting.

Sherman, Jo. Planning Manager. Butte County, Oroville, CA. February 2003 - meeting.

Slota, Jack. City Manager. City of Gridley, Gridley, CA. February 2003 - meeting.

Trinca, Mike. District Manager. Paradise Recreation and Park District, Paradise, CA. August 27, 2003 - telephone conversation.

Waugh, Clinton. Captain. Butte County Sheriff's Department, Oroville, CA. April 15, 2003 - telephone conversation.

7.3 INTERNET CITATIONS

California Department of Water Resources. 2003. URL = (www.orovillerelicensing.water.ca.gov)

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APPENDIX A

Fiscal Model Description

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

FISCAL MODEL DESCRIPTION

Following is a description of the fiscal component of the Economic-Fiscal Model used to evaluate the fiscal effects of recreation activity and operations and maintenance expenditures related to the Oroville Facilities. This appendix is intended to be used with the fiscal spreadsheet model to understand the linkages between the components (worksheets) of the model.

The fiscal component of the Economic-Fiscal Model is linked to the model's economic component, which provides estimates of economic effects used in the fiscal analysis. Because of these linkages, not all of the worksheets and data sets comprising the overall Economic-Fiscal Model are included in this appendix. Refer to the technical appendix in the Relicensing Study – *Recreation Activity, Spending, and Associated Economic Impacts* report for a description of the economic component of the Economic-Fiscal Model.

The tables included in the following sections represent examples of the models' inputs and outputs. With the exception of tables showing baseline data, the values shown by the tables do not represent current or future fiscal conditions or effects. *Readers should not attempt to compare the results shown in the tables in this appendix with results reported in the main body of the report.* For more information on the assumptions and methods employed in constructing the fiscal model, refer to report section 4.0, "Methodology."

A.1 FISCAL MODELS FOR BUTTE COUNTY AND THE CITY OF OROVILLE

The fiscal models for Butte County and the City of Oroville are comprehensive fiscal spreadsheet models that are incorporated directly into the integrated Economic-Fiscal Model. The fiscal models comprise several Excel worksheets that are linked together to provide inputs and outputs for other worksheets within each model. To run the fiscal models, a user must first input a change in final demand in the model. The change can either be input directly in the Long Form Worksheet (generated by the economic component of the Economic-Fiscal Model) for the appropriate jurisdiction, or it can be input via a fiscal impact translator. For example, for a construction project in Oroville, the user can input the estimated cost of the construction project in the Oroville Long Form's new construction sector (or whichever sector is appropriate). The model then calculates the fiscal impacts of the project.

Some project-related activities, such as a change in Lake Oroville visitation, require a translator to calculate final demand effects. For example, an increase in visitation, expressed as a change in recreation visitor days, would increase the demand for guide services, restaurant meals, and food from stores in Oroville. The translator would calculate these final demand changes and link them into the appropriate worksheet of the model, which would then calculate fiscal impacts.

The Butte County and City of Oroville fiscal models are comprehensive in that they include all current budget items of both jurisdictions' budgets. The most current budgets (2002-03 adopted budgets) were used for both jurisdictions. When the models are running at baseline equilibrium (i.e., when the economy is running at capacity with no changes), the budgets are balanced. Revenue in all categories is equal to revenue in the current adopted budgets and expenditures are equal to current budgeted expenditures.

When a change is simulated (such as construction of a new marina), the model calculates changes in revenues and costs associated with the project and reports them as forecasted fiscal impacts. These changes are based on an allocation of budget revenues and costs categorized as either endogenous or exogenous factors. Endogenous factors are internal economic and demographic changes in the study area and include changes in population, earning, and sales. For example, a change in population would affect the demand for law enforcement, fire protection, and road-related services. Conversely, on the revenue side, a change in population would result in a change in business sales, which, in turn, would affect sales tax collections.

Exogenous factors are dependent upon conditions outside the study area, such as changes in non-resident visitation to Lake Oroville recreation facilities. Other exogenous changes include: changes in grant revenues that are not population-based; changes in revenues from outside the area, such as gas tax revenues from the traveling public; changes in revenues not related to local economic conditions, such as interest on invested funds; and changes in costs associated with services to the larger California population, such as police costs associated with responding to crimes committed by people residing outside of Butte County.

A-1 Butte County Fiscal Model

Table A-1. Butte County baseline revenues.

Revenue Source	Amount ($1,000)
TOTAL REVENUES	**$275,124.0**
General Fund Revenue	**$24,709.0**
Property tax (Current, Delinquent and Penalties)	$14,292.0
Sales tax	$3,250.0
Realignment sales taxes (MH and Health)	$9,032.0
Property transfer tax	$700.0
Aircraft tax	$63.0
Transient occupancy	$43.0
Timber yield tax	$192.0
Motor vehicle and highway user taxes	$30,345.0
Gas tax	$2,606.0
Licenses and permits	**$2,916**
Fines and forfeitures	**$1,999**
Use of money and property	**$1,969**
State revenue (minus gas, motor vehicle and realignment)	**$106,355**
Federal revenues	**$72,222**
Other intergovernmental revenues	**$3,305**
Charges for services	**$20,862**
Miscellaneous revenue	**$3,607**
Other financing sources	**$1,367**

Source: County of Butte 2002.

Table A-2. Butte County baseline expenditures.

Type of Expenditure	Amount ($1,000)
Services	
General administration	$14,495
Judicial	$13,461
Police	$13,672
Detention	$21,572
Fire protection	$10,731
Road operations	$16,648
Planning and inspection services	$1,895.0
Parks and recreation	$306
Library	$2,324
Welfare	$116,667
Child support services	$9,556
Health and sanitation	$56,289.0
Education	$2,559
Water services	$963
Animal control and emergency services	$732
Transit	$485
Agricultural services and programs	$1,522
Miscellaneous services	$320
Subtotal	**$284,196**
Subtractions	
Contingencies	$6,726
Reserves	$2,346
TOTAL	**$275,124**
Excluded from Analysis	
Capital projects	$796
Equipment replacement	$1,544
ISF Equipment replacement	$2,057

Source: County of Butte 2002.

Description: Tables A-1 and A-2 show line item detail for the Butte County Budget in the Baseline Equilibrium Model for the FY 2002-03 budget year.

Inputs to Worksheet: Inputs to this worksheet are data on line item revenues and expenditures.

Outputs of Worksheet: Line item values in this worksheet are multiplied by endogenous and exogenous percentages from another portion of this sheet.

Data Sources: Data were compiled from the Butte County FY 2002-03 adopted budget.

Links to Other Worksheets: This worksheet is forward-linked to another portion of this spreadsheet that computes the total dollar amount of each budget line item attributable to endogenous factors (sales, earnings, and population) and exogenous factors (visitors and other exogenous factors) (Tables A-5 and A-6).

Table A-3. Butte County endogenous and exogenous revenue variables.

Revenue Source	Endogenous			Exogenous	
	Sales-Based	Earnings-Based	Population-Based	Visitor-Based	Other
General Fund Revenue					
Property tax		100%			
Sales tax	96.4%			0.6%	3%
Realignment sales	100%				
Property transfer tax		100%			
Aircraft tax		100%			
Transient occupancy	100%				
Timber yield tax					100%
Motor vehicle			99%	0.6%	
Gas tax	96%			0.6%	3%
Licenses and permits	20%		80%		
Fines and forfeitures			100%		
Use of money					100%
State revenue			100%		
Federal revenues			90%		10%
Intergovernmental revenues					100%
Charges for services					100%
Miscellaneous revenue					100%
Other financing sources					100%

Source: Derived based on recreation user survey data and Economic-Fiscal Model runs for the study.

Table A-4. Butte County endogenous and exogenous expenditure variables.

Type of Expenditure	Endogenous			Exogenous	
	Sales-Based	Earnings-Based	Population-Based	Visitors-Based	Other
Services					
General administration			90.0%		10.0%
Judicial			90.0%	0.57%	10.0%
Police			89.4%	0.57%	10.0%
Detention			89.4%	0.57%	10.0%
Fire protection			98.4%	0.57%	1.0%
Road operations			84.4%	0.57%	15.0%
Planning			95.0%		5.0%
Parks and recreation			100.0%		
Library			100.0%		
Welfare			100.0%		
Child support services			100.0%		
Health and sanitation			100.0%		
Education			100.0%		
Water services			100.0%		
Animal control			95.0%		5.0%
Transit			100.0%		
Agricultural services	100.0%				
Miscellaneous services			100.0%		
Subtractions					
Contingencies			100.0%		
Reserves			100.0%		

Source: Derived based on recreation user survey data and Economic-Fiscal Model runs for the study.

Description: Tables A-3 and A-4 show line item detail for the allocations of Butte County budget revenue and costs to endogenous and exogenous variables in the Baseline Model.

Inputs to Worksheet: Inputs to this worksheet are the percent of visitor sales in Butte County (calculated in the Butte County Long Form worksheet). Note that this percentage is only calculated when evaluating visitor activity (referred to as "visitor staging").

Outputs of Worksheet: Line item values in this worksheet are multiplied by line items in Tables A-1 and A-2 to derive Tables A-5 and A-6 (Butte County revenue and cost allocations, respectively).

Data Sources: Data on expenditures and visitation levels produced by the recreation user survey were used by the Economic-Fiscal Model to generate the visitor-driven exogenous variables in this spreadsheet.

Links to Other Worksheets: This worksheet is backward-linked to the Butte County Baseline Revenues and Expenditures worksheet (Tables A-1 and A-2) and forward-linked to the Butte County Baseline Budget Allocations worksheet (Tables A-5 and A-6).

Table A-5. Butte County baseline budget allocations: revenues.

Revenue Source	Endogenous			Exogenous	
	Sales-Based	Earnings-Based	Population-Based	Visitor-Based	Other
TOTAL REVENUES	**$15,403**	**$15,055**	**$205,859**	**$205**	**$38,602**
General Fund Revenue					
Property tax	$0	$14,292	$0	$0	$0
Sales tax	$3,232	$0	$0	$18	$0
Realignment sales	$9,032	$0	$0	$0	$0
Property transfer tax	$0	$700	$0	$0	$0
Aircraft tax	$0	$63	$0	$0	$0
Transient occupancy	$43	$0	$0	$0	$0
Timber yield tax	$0	$0	$0	$0	$192
Motor vehicle	$0	$0	$30,173	$172	$0
Gas tax	$2,513	$0	$0	$15	$78
Licenses and permits	$583	$0	$2,332	$0	$0
Fines and forfeitures	$0	$0	$1,999	$0	$0
Use of money	$0	$0	$0	$0	$1,969
State revenue	$0	$0	$106,355	$0	$0
Federal revenues	$0	$0	$65,000	$0	$7,222
Intergovernmental revenues	$0	$0	$0	$0	$3,305
Charges for services	$0	$0	$0	$0	$20,862
Miscellaneous revenue	$0	$0	$0	$0	$3,607
Other financing sources	$0	$0	$0	$0	$1,367

Source: County of Butte 2002, and calculations produced by the Economic-Fiscal Model.

Table A-6. Butte County baseline budget allocations: expenditures.

Type of Expenditure	Endogenous			Exogenous	
	Sales-Based	Earnings-Based	Population-Based	Visitor-Based	Other
Services					
General administration	$0	$0	$13,046	$0	$1,450
Judicial	$0	$0	$12,115	$76	$1,346
Police	$0	$0	$12,227	$78	$1,367
Detention	$0	$0	$19,292	$122	$2,157
Fire protection	$0	$0	$10,563	$61	$107
Road operations	$0	$0	$14,056	$95	$2,497
Planning	$0	$0	$1,800	$0	$95
Parks and recreation	$0	$0	$306	$0	$0
Library	$0	$0	$2,324	$0	$0
Welfare	$0	$0	$116,667	$0	$0
Child support services	$0	$0	$9,556	$0	$0
Health and sanitation	$0	$0	$56,289	$0	$0
Education	$0	$0	$2,559	$0	$0
Water services	$0	$0	$963	$0	$0
Animal control	$0	$0	$695	$0	$37
Transit	$0	$0	$485	$0	$0
Agricultural services	$1,522	$0	$0	$0	$0
Miscellaneous services	$0	$0	$320	$0	$0
Subtotal	**$1,522**	**$0**	**$273,262**	**$432**	**$9,056**
Subtractions					
Contingencies	$0	$0	$6,726	$0	$0
Reserves	$0	$0	$2,346	$0	$0

Source: County of Butte 2002, and calculations produced by the Economic-Fiscal Model.

Description: Tables A-5 and A-6 show line item detail for the results of allocations of baseline Butte County budget revenue and costs to endogenous and exogenous variables.

Inputs to Worksheet: Inputs to this worksheet are data on line item revenues and expenditures and percentage allocations for endogenous and exogenous variables. The Economic-Fiscal Model calculates visitor sales percentages, based upon direct expenditure inputs associated with visitors to Oroville Facilities.

Outputs of Worksheet: Line item values in this worksheet are multiplied by changes in sales, earnings, population, or visitation calculated by the Economic-Fiscal Model. These data are used in calculating the Butte County Coefficients Matrix worksheet (Tables A-8 and A-9).

Data Sources: Line item revenues and expenditures were derived from the Butte County FY 2002-03 budget (Table A-1). All other data are supplied by internal calculations.

Links to Other Worksheets: This worksheet is backward-linked to the Butte County Baseline Budget worksheet (Tables A-1 and A-2) and the Butte County Endogenous and Exogenous Variables worksheet (Tables A-3 and A-4), and forward-linked to the Butte County Coefficients Matrix worksheet (Tables A-8 and A-9).

Table A-7. Calculated Economic-Fiscal Model values for Butte County.

	Sales (in thousands)	Earnings (in thousands)	2002 Population
Total economy	$4,862,819	$2,080,835	204,600
Motel sector	$15,555		
Trade sector	$673,833		

Source: Calculations produced by the Economic-Fiscal Model based on baseline model data (Minnesota IMPLAN Group 2002).

Description: Table A-7 includes values, in thousands of dollars and number of persons, which are calculated by the Economic-Fiscal Model. These values are used to calculate coefficients for the fiscal model. Sales were calibrated to three values: total sales, motel sector sales, and trade sector sales. Total sales represent total regional output (TRO) of the baseline model. Motel sales represent baseline sales (shown in producer prices) for the accommodations sectors. Trade represents TRO of the trade sector (retail and wholesale trade). Earnings are baseline earnings. The population value represents 2002 population, as estimated by the California Department of Finance.

Inputs to Worksheet: These values are linked to the Butte County Short Form (not shown) that calculates total sales and earnings impacts. Employment impacts calculated in the Butte County Short Form are multiplied by a population/employment ratio that is calculated in the Commuting worksheet (not shown). The commuting sheet distributes employment impacts to Butte County communities based upon current commuting patterns.

Outputs of Worksheet: Values in this worksheet are used in calculating the Butte County Coefficients Matrix worksheet (Tables A-8 and A-9).

Data Sources: Commuting patterns were derived from a combination of sources, including ZIP Code Business Patterns, Census 2000, Journey to Work data, and field interviews of major employers.

Links to Other Worksheets: This worksheet is backward-linked to the Butte County Short Form and to the Commuting Worksheet, which supply data for the worksheet. The outputs of this sheet are forward-linked to the Butte Coefficients Matrix worksheet (Tables A-8 and A-9).

Table A-8. Butte County coefficients matrix: revenue detail.

Revenue Source	Endogenous		
	Sales-Based	Earnings-Based	Population-Based
General Fund Revenue			
Property tax (current, delinquent and penalties)	-	0.00687	-
Sales tax see sheet "sales tax change"	0.00066	-	-
Realignment sales taxes (MH and Health)	0.01340	-	-
Property transfer tax	-	0.00034	-
Aircraft tax	-	0.00003	-
Transient occupancy	0.00276	-	-
Timber yield tax	-	-	-
Motor vehicle and highway user taxes	-	-	0.14747
Gas tax	0.00373	-	-
Licenses and permits	0.00012	-	0.01140
Fines and forfeitures	-	-	0.00977
Use of money and property	-	-	-
State revenue (minus gas, motor vehicle and realignment)	-	-	0.51982
Federal revenues	-	-	0.31769

Source: Calculations produced by the Economic-Fiscal Model.

Table A-9. Butte County coefficients matrix: expenditure detail.

Type of Expenditure	Sales-Based	Earnings-Based	Population-Based
Services			
General administration	-	-	0.06376
Judicial	-	-	0.05921
Police	-	-	0.05976
Detention	-	-	0.09429
Fire protection	-	-	0.05163
Road operations	-	-	0.06870
Planning and inspection services	-	-	0.00880
Parks and recreation	-	-	0.00150
Library	-	-	0.01136
Welfare	-	-	0.57022
Child support services	-	-	0.04670
Health and sanitation	-	-	0.27512
Education	-	-	0.01251
Water services	-	-	0.00471
Animal control and emergency services	-	-	0.00340
Transit	-	-	0.00237
Agricultural services and programs	0.00436	-	-
Miscellaneous services	-	-	0.00156

Source: Calculations produced by the Economic-Fiscal Model.

Description: Tables A-8 and A-9 are coefficients that are calculated for the Butte County Fiscal Impact Results worksheet (Tables A-11 and A-12). When a change in sales, earnings, or population is multiplied by the appropriate vector of coefficients, the model will estimate fiscal impacts. For example, a change in population of 1000 would produce a change in Butte County public transit costs of $2,370 (1000 x 0.00237=2.370). Note that the results are expressed in thousands.

Inputs to Worksheet. Values calculated in the coefficients matrix use inputs from the Butte County Baseline Budget Allocation worksheet (Tables A-5 and A-6) and from the calculated model values from Table A-7.

Outputs of Worksheet: Coefficients in this worksheet are multiplied by changes in sales, earnings, and population calculated by the Economic-Fiscal Model to produce the fiscal results shown in the Butte County Fiscal Impact Results worksheet (Tables A-11 and A-12).

Data Sources: The worksheet relies on calculations generated by linked model worksheets.

Links to Other Worksheets: This worksheet is backward-linked to the Butte County Baseline Budget Allocation sheet (Tables A-5 and A-6) and to the Butte County Short Form worksheet (not shown). The worksheet is forward-linked to the Butte County Fiscal Impact Results worksheet (Tables A-11 and A-12).

Table A-10. Butte County visitor-driven translators and impacts.

	Translators ($/visitor)	Local	Non-local	Out-of-Area	All Visitors
Lake Oroville Visitors	**---**	**206,300**	**137,660**	**316,900**	**660,860**
Fire protection	0.28	$57,764	$38,545	$88,732	$185,041
Law enforcement	0.13	$26,819	$17,895	$41,197	$85,912
Road maintenance	0.03	$6,189	$4,130	$9,507	$19,826
TOTAL COST		**$90,772**	**$60,573**	**$139,436**	**$290,779**

Source: Study report for Existing Recreation Use (R-9) and recreation visitor survey for the study, and budget data and information gathered during field interviews with Butte County public service providers (refer to section 4.0, "Methodology," in the main body of the report).

Description: Table A-10 demonstrates the calculation of direct visitor-driven costs. Visitor-driven costs are costs associated with governmental services provided directly to visitors to the Oroville Facilities. The example shown above only includes visitors to Lake Oroville. Direct visitor costs in the model are a function of the number of visitors multiplied by the estimated per-visitor service cost.

Inputs to Worksheet: Information on the number of visitors was derived from the study report for Existing Recreation Use (R-9) and from recreation user survey data. Direct visitor costs were estimated using budget data and information gathered during field interviews with Butte County public service providers (refer to section 4.0, "Methodology," in the main body of the report).

Outputs of Worksheet: The outputs show the estimated public service costs generated directly by visitors. This worksheet is linked directly to Table A-13.

Data Sources: See "Inputs to Worksheet."

Links to Other Worksheets: This worksheet is backward linked to the Visitor Summary worksheet (not shown) and forward-linked to the Butte County Fiscal Impact Summary worksheet (Table A-13).

Table A-11. Butte County fiscal impact results: estimated revenues. (Oroville visitation simulation)

Revenue Source	Projected Revenue
General Fund Revenue	
Property tax (current, delinquent and penalties)	$75,730
Sales tax	$47,165
Realignment sales taxes (MH and Health)	$131,076
Property transfer tax	$3,709
Aircraft tax	$334
Transient occupancy	$970
Timber yield tax	$0
Motor vehicle and highway user taxes	$344,155
Gas tax	$51,236
Licenses and permits	$16,101
Fines and forfeitures	$11,411
Use of money and property	$0
State revenue (minus gas, motor vehicle and realignment)	$0
Federal revenues	$0
Other intergovernmental revenues	$0
Charges for services	$0
Miscellaneous revenue	$0
Other financing sources	$0
TOTAL	$681,886

Source: Calculations produced by the Economic-Fiscal Model.

Table A-12. Butte County fiscal impact results: estimated expenditures. (Oroville visitation simulation)

Type of Expenditure	Projected Expenditures
Services	
General administration	$74,460
Judicial	$145,418
Detention	$232,343
Police	$147,718
Fire protection	$121,455
Road operations	$175,121
Planning and inspection services	$10,275
Parks and recreation	$1,747
Library	$13,265
Welfare	$0
Child support services	$0
Health and sanitation	$0
Education	$0
Water services	$5,497
Animal control and emergency services	$3,969
Transit	$2,768
Agricultural services and programs	$857
Miscellaneous services	$1,826
Subtotal	$936,719
Subtractions contingencies	$22,176
Subtractions reserves	$7,728
TOTAL	$906,816

Source: Calculations produced by the Economic-Fiscal Model.

Description: Tables A-11 and A-12 show the detailed results of the fiscal analysis. These results are summed across rows in the columns labeled projected revenue and projected expenditures. In the expenditures worksheet, contingencies and reserves are subtracted from the budget to balance the budget.

Inputs to Worksheet: Values calculated in this worksheet are derived by multiplying values in Table A-7 (Calculated Economic-Fiscal Model Values for Butte County) by the coefficients matrix in Tables A-8 and A-9.

Outputs of Worksheet: The values derived in this table are aggregated into cost and revenue categories, as summarized in the Butte County Fiscal Impact Summary worksheet (Table A-13).

Data Sources: The worksheet relied on data supplied from calculations produced by linked model worksheets.

Links to Other Worksheets: This worksheet is backward linked to Butte County Coefficients Matrix (Tables A-8 and A-9) and to the Calculated Economic-Fiscal Model

Values worksheet (Table A-7). The worksheet is forward linked to the Butte County Fiscal Impact Summary worksheet (Table A-13)

Table A-13. Butte County fiscal impact summary. (Visitor impact simulation)

	Visitor-Driven	Indirect (growth-related)	Total
Costs			
Fire protection	$185,041	$121,455	$306,496
Law enforcement	$85,912	$525,479	$888,952
Road maintenance	$19,826	$175,121	$201,556
Other services and costs		$84,761	$84,761
TOTAL COSTS	$290,779	$906,816	$1,197,595
Revenues			
Sales tax		$178,241	$178,241
Property tax		$75,730	$75,730
Lodging Tax		$970	$970
Other revenue		$426,945	$426,945
TOTAL REVENUES		$681,886	$681,886
REVENUES MINUS COSTS			-$515,709

Source: Calculations produced by the Economic-Fiscal Model.

Description: Table A-13 shows a summary of Butte County fiscal impacts, specifically the fiscal impacts of an example visitor simulation.

Inputs to Worksheet: Values in this worksheet are calculated in Tables A-10, A-11, and A-12. "Other costs" include all costs other than police, fire, and road costs. "Other revenue" combines all revenue sources other than sales, property, and lodging taxes.

Outputs of Worksheet: This worksheet is the final worksheet in the Butte County Fiscal Model.

Data Sources: The worksheet relied on data supplied from calculations generated by linked worksheets.

Links to Other Worksheets: This worksheet is backward-linked to the Butte County Visitor-Driven Translators and Impacts worksheet (Table A-10) and the Butte County Fiscal Impact Results worksheet (Tables A-11 and A-12).

A.1.2 City of Oroville Fiscal Model

The fiscal model for the City of Oroville is similar to the Butte Fiscal Model in most respects. It is a comprehensive model that includes all revenues and expenditures. The City of Oroville adopted budget for FY 2002-03 was used as the basis for revenue and expenditures for all departments and for the general fund.

When the baseline or test model is run, revenues are balanced with expenditures. When a change in final demand is simulated, the model generates projected revenue and expenditures associated with the change.

Endogenous and exogenous variables are similar for Butte County and Oroville with one exception. Like Butte County, the City of Oroville has to provide services to a population outside its jurisdiction. In the case of Oroville, the population of unincorporated areas (31,754) surrounding the city is about two and a half times the population of the City of Oroville (13,250)

The population of this surrounding trade area affects police, roads, parks, community development, and other city services. Some off-setting revenue is received by the City of Oroville in the form of increased sales and gas tax revenues. Oroville also receives a large portion of its revenue for some services from State and Federal funds. These transfer funds reflect the demands of a larger population that Oroville must serve. Consequently, a significant portion of revenues and expenditures for Oroville are attributed to exogenous factors. Exogenous population for Oroville is the population of the unincorporated areas surrounding Oroville.

Table A-14. City of Oroville baseline revenues.

Revenue Source	FY 2002-03 Amount ($1,000)
TOTAL REVENUE	**$13,419**
General Fund Revenues	
Property tax	$419
Sales tax	$2,674
Motel (TOT) tax	$314
Motor vehicle licenses	$665
Franchises and licenses	$227
Utility user fees	$900
Fines, fees and refunds	$501
Interest income	$260
Other revenue	$107
Fund transfers	$1,420
Service Charges and Enterprise Funds	
Administration	$79
Community development	$16
Public safety	$167
Fire	$156
Parks	$33
Gas tax	$270
Public works	$48
Transit	$380
Sewer	$1,229
Airport	$147
Storm sewer and drainage	$17
Other Revenues (Transfers)	
Community development	$2,167
Public safety	$173
Roads and traffic	$1,050

Source: City of Oroville 2002.

Table A-15. City of Oroville baseline expenditures (in thousands).

TOTAL EXPENDITURES	**$13,419**
General Fund Expenses	
General administration	
Council/treasurer	$32
Clerk	$77
Human resources	$70
Administrator	$187
Attorney	$85
Finance	$415
Risk management	$383
Police	$2,691
Fire	$1,637
Community development	$183
Public works	$764
Parks	$784
Restricted Funds and Transfers	
Vehicle maintenance	$207
Roads and traffic	$570
Fire	$0
Police	$173
Airport	$127
Transit	$380
Community development	$2,167
Enterprise Funds	
Sewer	$1,229
Water	$0
Fire	$0
Transit	$380
Airport	$147
Solid waste	$0
Drainage	$15
Parks	$716

Source: City of Oroville 2002.

Description: Tables A-14 and A-15 show line-item detail for the City of Oroville's FY 2002-03 budget in the Baseline Equilibrium Model.

Inputs to Worksheet: Inputs to this worksheet are FY 2002-03 budget data.

Outputs of Worksheet: Line item values in this worksheet are multiplied by endogenous and exogenous percentages in Tables A-16 and A-17 to produce Oroville budget allocations (Tables A-18 and A-19).

Data Sources: City of Oroville FY 2002-03 adopted budget.

Links to Other Worksheets: This worksheet is linked to another portion of this spreadsheet that computes the total dollar amount of each budget line item attributable to endogenous (sales, earnings, and population) and exogenous factors (visitors and other exogenous factors). This calculation produces the Oroville Budget Allocations worksheet (Tables A-18 and A-19).

Table A-16. City of Oroville endogenous and exogenous revenue variables.

	Endogenous			Exogenous		
	Sales-Based	Earnings-Based	Population Based	Visitor-Based	Population Based	Fixed Value/Grant
General Fund Revenues						
Property tax		100.0%				
Sales tax	98.0%		2.0%			
Motel (TOT) tax	100.0%					
Motor vehicle licenses			98.0%	2.0%		
Franchises and licenses			100.0%			
Utility user fees			100.0%			
Fines, fees and refunds			100.0%			
Interest income						100.0%
Other revenue			100.0%			
Fund transfers						100.0%
Service Charges and Enterprise Funds						
Administration			100.0%			
Community development			100.0%			
Fire			100.0%			
Parks			100.0%			
Gas tax	98.0%	0.0%	0.0%	2.0%		
Public works			100.0%			
Transit			90.0%			10.0%
Sewer			90.0%			10.0%
Airport		100.0%				
Storm sewer and drainage			100.0%			
Other Revenues (Transfers)						
Community development					80.0%	20.0%
Public safety						100.0%
Roads and traffic					100.0%	

Source: Derived based on recreation user survey data and Economic-Fiscal Model runs for the study.

Table A-17. City of Oroville endogenous and exogenous expenditure variables.

Type of Expenditures	Endogenous			Exogenous		
	Sales-Based	Earnings-Based	Population-Based	Visitors-Based	Population-Based	Grants
General Administration						
Council/treasurer			100.0%			
Clerk			100.0%			
Human resources			100.0%			
Administrator			100.0%			
Attorney			100.0%			
Finance			100.0%			
Risk management			100.0%			
Police			100.0%	0.0%		
Fire			100.0%	0.0%		
Community development			100.0%			0.0%
Public work			100.0%	0.0%		
Parks			100.0%	0.0%		
Restricted Funds						
Vehicle maintenance			100.0%			
Roads and traffic	20.0%		80.0%			
Fire			100.0%			
Police			50.0%			50.0%
Airport		30.0%	0.0%			70.0%
Transit			75.0%			25.0%
Community development			42.0%			58.0%
Enterprise Funds						
Sewer	50.0%	0.0%	50.0%			
Water	50.0%	0.0%	50.0%			
Fire	50.0%		50.0%			
Transit			100.0%			
Airport			100.0%			
Solid waste	50.0%		50.0%			
Drainage	50.0%		50.0%			
Parks			100.0%			

Source: Derived based on recreation user survey data and Economic-Fiscal Model runs for the study.

Description: Tables Oroville A-16 and A-17 show line-item detail for the allocations of Oroville budget revenue and costs to endogenous and exogenous variables in the Baseline Model.

Inputs to Worksheet: Inputs to this worksheet are the percent of visitor sales in the City of Oroville (calculated in Oroville Long Form Worksheet). Note that this percentage is only calculated when the visitor staging component of the model is active.

Outputs of Worksheet: Line-item values in this worksheet are multiplied by line items in Tables A-14 and A-15 to derive Tables A-18 and A-19 (Oroville Baseline Budget Allocations worksheet).

Data Sources: Data on expenditures and visitation levels produced by the study report for Existing Recreation Use (R-9) and the recreation user survey were used by the Economic-Fiscal Model to generate the visitor-driven exogenous variables in this spreadsheet.

Links to Other Worksheets: This worksheet is linked to the City of Oroville Baseline Revenues and Expenditures worksheet (Tables A-14 and A-15) and to the Oroville Baseline Budget Allocations worksheet (Tables A-18 and A-19).

Table A-18. City of Oroville baseline budget allocations: revenues (in thousands).

	Endogenous			Exogenous		
	Sales-Based	**Earnings-Based**	**Population-Based**	**Visitors-Based**	**Population Based**	**Grants**
TOTAL REVENUES	**$3,200**	**$566**	**$4,351**	**$72**	**$2,784**	**$2,447**
General Fund Revenues						
Property tax	$0	$419	$0	$0	$0	$0
Sales tax	$2,621	$0	$0	$53	$0	$0
Motel (TOT) Tax	$314	$0	$0	$0	$0	$0
Motor vehicle licenses	$0	$0	$652	$13	$0	$0
Franchises and licenses	$0	$0	$227	$0	$0	$0
Utility user fees	$0	$0	$900	$0	$0	$0
Fines, fees and refunds	$0	$0	$501	$0	$0	$0
Interest income	$0	$0	$0	$0	$0	$260
Other revenue	$0	$0	$107	$0	$0	$0
Fund transfers	$0	$0	$0	$0	$0	$1,420
Service Charges and Enterprise Funds and Other Restricted Funds						
Administration	$0	$0	$79	$0	$0	$0
Community development	$0	$0	$16	$0	$0	$0
Public safety	$0	$0	$167	$0	$0	$0
Fire	$0	$0	$156	$0	$0	$0
Parks	$0	$0	$33	$0	$0	$0
Gas tax	$265	$0	$0	$5	$0	$0
Public works	$0	$0	$48	$0	$0	$0
Transit	$0	$0	$342	$0	$0	$38
Sewer	$0	$0	$1,106	$0	$0	$123
Airport	$0	$147	$0	$0	$0	$0
Storm sewer and drainage	$0	$0	$17	$0	$0	$0
Other Revenues (Transfers)						
Community development	$0	$0	$0	$0	$1,734	$433
Public safety	$0	$0	$0	$0	$0	$173
Roads and traffic	$0	$0	$0	$0	$1,050	$0

Source: City of Oroville 2002, and calculations produced by the Economic-Fiscal Model.

Table A-19. City of Oroville baseline budget allocations: expenditures.

Type of Expenditure	Endogenous			Exogenous		
	Sales-Based	Earnings-Based	Population-Based	Visitors-Based	Population Based	Grants
General Administration						
Council/treasurer	$0	$0	$32	$0	$0	$0
Clerk	$0	$0	$77	$0	$0	$0
Human resources	$0	$0	$70	$0	$0	$0
Administrator	$0	$0	$187	$0	$0	$0
Attorney	$0	$0	$85	$0	$0	$0
Finance	$0	$0	$415	$0	$0	$0
Risk management	$0	$0	$383	$0	$0	$0
Police	$0	$0	$2,691	$0	$0	$0
Fire	$0	$0	$1,637	$0	$0	$0
Community development	$0	$0	$183	$0	$0	$0
Public works	$0	$0	$764	$0	$0	$0
Parks	$0	$0	$784	$0	$0	$0
Restricted Funds and Transfers						
Vehicle maintenance	$0	$0	$207	$0	$0	$0
Roads and traffic	$114	$0	$456	$0	$0	$0
Fire	$0	$0	$0	$0	$0	$0
Police	$0	$0	$87	$0	$0	$87
Airport	$0	$38	$0	$0	$0	$89
Transit	$0	$0	$285	$0	$0	$95
Community development	$0	$0	$910	$0	$0	$1,257
Enterprise Funds						
Sewer	$615	$0	$615	$0	$0	$0
Water	$0	$0	$0	$0	$0	$0
Fire	$0	$0	$0	$0	$0	$0
Transit	$0	$0	$380	$0	$0	$0
Airport	$0	$0	$147	$0	$0	$0
Solid waste	$0	$0	$0	$0	$0	$0
Drainage	$8	$0	$8	$0	$0	$0
Parks	$0	$0	$716	$0	$0	$0

Source: City of Oroville 2002, and calculations produced by the Economic-Fiscal Model.

Description: Tables A-18 and A-19 show revenue and expenditure allocations for the baseline Economic-Fiscal Model.

Inputs to Worksheet: Inputs to this worksheet are data on line-item revenues and expenditures and percentage allocations for endogenous and exogenous variables. The Economic-Fiscal Model calculates visitor sales percentages.

Outputs of Worksheet: Line-item values in this worksheet are multiplied by estimated changes in sales, earnings, population, or visitation generated by the Economic-Fiscal Model. These data are used in calculating the Oroville Coefficients Matrix worksheet (Tables A-21 and A-22).

Data Sources: Line item revenues and expenditures were compiled from the City of Oroville adopted FY 2002-03 budget. All other data are supplied by internal calculations performed by the model.

Links to Other Worksheets: This worksheet is linked to the Oroville Coefficients Matrix worksheet (Tables A-21 and A-22). It is also linked to the Oroville Endogenous and Exogenous Variables worksheet (Tables A-16 and A-17).

Table A-20. Calculated Economic-Fiscal Model values for the City of Oroville.

Total Regional Output	
Sales (in thousands)	$855,312.7
Earnings (in thousands)	$379,573.2
Motels	
Sales (in thousands)	$3,352.5
Retail Trade	
Sales (in thousands)	$99,284.7
Population	
City of Oroville	13,250
Greater Oroville	48,811

Source: Calculations produced by the Economic-Fiscal Model based on baseline model data (Minnesota IMPLAN Group 2002).

Description: Table A-20 includes values that are calculated by the Economic- Fiscal Model. (Values from the baseline model are shown). These values are used to calculate coefficients for the fiscal model. Sales were calibrated to three values: total sales, motel sales, and retail trade sales. Total sales are total regional output of the baseline model. Motel sales are baseline sales (shown in producer prices). Retail trade sales represent sales in the retail sector. Earnings are baseline earnings, and population is baseline population. Populations for the City of Oroville (13,250) and for the Oroville Model Area (48,811) are shown.

Inputs to Worksheet. These values are linked to the Oroville Long Form worksheet (produced by the input-output component of the Economic-Fiscal Model) that calculates total sales and earnings impacts. Employment impacts calculated in the Oroville Long Form are multiplied by a population/employment ratio that is calculated in the

Commuting worksheet (not shown). The Commuting worksheet distributes employment impacts to other Butte County communities based upon current commuting patterns. Retail sales come from the Oroville Short Form (not shown).

Outputs of Worksheet: Values in this worksheet are used in calculating the Oroville Coefficients Matrix worksheet (Tables A-21 and A-22).

Data Sources: Commuting patterns were derived from a combination of sources including ZIP Code Business Patterns, Census 2000, Journey to Work data, and field interviews of major employers.

Links to Other Worksheets: This worksheet is linked to the Oroville Short Form (not shown), the Oroville Long Form (not shown), and the Commuting worksheet (not shown), which supply data for the worksheet. The outputs of this sheet are linked to the Oroville Coefficients Matrix worksheet (Tables A-21 and A-22).

Table A-21. City of Oroville coefficients matrix: revenue detail.

Revenue Source	Endogenous		
	Sales-Based	Earnings-Based	Population Based
General Fund Revenues			
Property tax	0	0.001104	0
Sales tax	0.003064	0	0
Motel (TOT) Tax	0.093662	0	0
Motor vehicle licenses		0	0.013354
Franchises and licenses	0	0	0.004651
Utility user fees	0	0	0.018438
Fines, fees and refunds	0	0	0.010264
Interest income	0	0	0
Other revenue	0	0	0.002192
Fund transfers	0	0	0
Service Charges, Enterprise Funds and Other Restricted Funds			
Administration	0	0	0.001618
Community development	0	0	0.000328
Public safety	0	0	0.003421
Fire	0	0	0.003196
Parks	0	0	0.000676
Gas tax	0.000309	0	8.37×10^{-7}
Public works	0	0	0.000983
Transit	0	0	0.007007
Sewer	0	0	0.022661
Airport	0	0.000387	0
Storm sewer and drainage	0	0	0.000348
Other Revenues (Transfers)			
Community development	0	0	0
Public safety	0	0	0
Roads and traffic	0	0	0

Source: Calculations produced by the Economic-Fiscal Model.

Table A-22. City of Oroville coefficients matrix: expenditure detail.

Type of Expenditure	Endogenous		
	Sales-Based	Earnings-Based	Population-Based
General Fund			
General Administration			
Council/treasurer	0	0	0.000645
Clerk	0	0	0.001578
Human resources	0	0	0.001434
Administrator	0	0	0.003831
Attorney	0	0	0.001741
Finance	0	0	0.008502
Risk management	0	0	0.007847
Police	0	0	0.055131
Fire	0	0	0.033538
Community development	0	0	0.003749
Public works	0	0	0.015652
Parks	0	0	0.016062
Restricted Funds and Transfers			
Vehicle maintenance	0	0	0.004241
Roads and traffic	0.000133	0	0.009342
Fire	0	0	0
Police	0	0	0.001772
Airport	0	0.0001	0
Transit	0	0	0.005839
Community development	0	0	0.018646
Enterprise Funds			
Sewer	0.000718	0	0.012589
Water	0	0	0
Fire	0	0	0
Transit	0	0	0.007785
Airport	0	0	0.003012
Solid Waste	0	0	0
Drainage	0.0000088	0	0.000154
Parks	0	0	0.014669

Source: Calculations produced by the Economic-Fiscal Model.

Description: Tables A-21 and A-22 are coefficients that are used to calculate the fiscal effects in the Oroville Fiscal Impact Results worksheet (Table A-24 and A-25). When a change in sales, earnings, or population is multiplied by the appropriate vector of coefficients, the model generates estimates of revenue and expenditure impacts. For example, a change in population of 1000 would produce a change in City of Oroville public transit costs of $5,839 (1000 x 0.005839 = 5.839). (Note that the results are expressed in thousands.)

Inputs to Worksheet: Values calculated in the Oroville Coefficients Matrix worksheet use inputs from the Oroville Baseline Budget Allocations worksheet (Tables A-18 and A-19) and from the Calculated Economic-Fiscal Model Values for Oroville worksheet (Table A-20). Values in Tables A-18 and A-19 are divided by the matching baseline value in Table A-20 to produce the coefficients. For example, the population-sensitive expenditures and revenues are divided by Oroville's population to derive the coefficients.

Outputs of Worksheet: Coefficients in this worksheet are multiplied by changes in sales, earnings, and population in Table A-20 to produce the fiscal results shown in the Oroville Fiscal Impact Results worksheet (Tables A-24 and A-25).

Data Sources: This worksheet relied on data supplied from other calculations generated by linked worksheets.

Links to Other Worksheets: This worksheet is backward-linked to the Oroville Baseline Budget Allocations worksheet (Tables A-18 and A-19) and to the Calculated Economic-Fiscal Model Values for Oroville worksheet (Table A-20), and forward-linked to the Oroville Fiscal Impact Results worksheet (Tables A-24 and A-25).

Table A-23. City of Oroville visitor-driven translators and impacts.

	Coefficients ($/visitor)	Local	Non-local	Out-of-Area	All Visitors
Visitors to Lake Oroville	**---**	**120,400**	**120,400**	**250,100**	**490,900**
Fire protection	0.16	$19,264	$19,264	$40,016	$78,544
Law enforcement	0.05	$6,020	$6,020	$12,505	$24,545
Road maintenance	0.06	$7,224	$7,224	$15,006	$29,454
TOTAL		**$32,508**	**$32,508**	**$67,527**	**$132,543**

Source: Study report for Existing Recreation Use (R-9) and recreation visitor survey for the study, and budget data and information gathered during field interviews with City of Oroville public service providers (refer to section 4.0, "Methodology," in the main body of the report).

Description: Table A-23 demonstrates the calculation of direct visitor-driven costs. Visitor-driven costs are costs associated with governmental services provided directly to visitors to the Oroville Facilities. The example shown above only includes visitors to Lake Oroville. Direct visitor costs in the model are a function of the number of visitors multiplied by the estimated per-visitor service cost.

Inputs to Worksheet: Information on the number of visitors was derived from the study report for Existing Recreation Use (R-9) and from recreation visitor survey data. Direct visitor costs were estimated using budget data and information gathered during field interviews with City of Oroville public service providers (refer to section 4.0, "Methodology," in the main body of the report).

Outputs of Worksheet: The outputs show the estimated public service costs generated directly by visitors. This worksheet is linked directly to Table A-26.

Data Sources: See "Inputs to Worksheet."

Links to Other Worksheets: This worksheet is backward-linked to the Visitor Summary worksheet (not shown) and forward-linked to the Oroville Fiscal Impact Summary worksheet (Table A-26).

Table A-24. City of Oroville fiscal impact results: estimated revenue. (Visitor simulation model)

	Projected Revenue
General Fund Revenues	
Property tax	$7,727
Sales tax	$299,028
Motel (TOT) tax	$29,485
Motor vehicle licenses	$24,066
Franchises and licenses	$3,784
Utility user fees	$15,004
Fines, fees and refunds	$8,352
Interest income	$0
Other revenue	$1,783
Fund transfers	$0
Service Charges and Enterprise Funds and Other Restricted Funds	
Administration	$1,317
Community development	$266
Public safety	$2,784
Fire	$2,600
Parks	$550
Gas tax	$24,386
Public works	$800
Transit	$5,701
Sewer	$18,440
Airport	$2,711
Storm sewer and drainage	$283
Other Revenues (Transfers)	
Community development	$0
Public safety	$0
Roads and traffic	$0
TOTAL	**$**449,075

Source: Calculations produced by the Economic-Fiscal Model.

Table A-25. City of Oroville fiscal impact results: estimated expenditures. (Visitor simulation model)

General Fund Expenses	Projected Expenditures
General administration	
Council/Treasurer	$525
Clerk	$1,284
Human resources	$1,167
Administrator	$3,118
Attorney	$1,417
Finance	$6,919
Risk management	$6,385
Police	$44,864
Fire	$27,292
Community development	$3,051
Public works	$12,737
Parks	$13,071
Restricted Funds and Transfers	
Vehicle maintenance	$3,451
Roads and traffic	$9,517
Fire	$0
Police	$2,740
Airport	$1,698
Transit	$6,335
Community development	$32,515
Enterprise Funds	
Sewer	$20,563
Water	$0
Fire	$0
Transit	$6,335
Airport	$2,451
Solid waste	$0
Drainage	$251
Parks	$11,937
TOTAL	$219,099

Source: Calculations produced by the Economic-Fiscal Model.

Description: Tables A-24 and A-25 show estimated revenues and expenditures, generated by an example level of visitor activity (visitor simulation model). In the expenditures worksheet (Table A-25), contingencies and reserves are subtracted to balance the budget.

Inputs to Worksheet: Values calculated in this worksheet are derived by multiplying values in Table A-20 (Calculated Economic-Fiscal Model Values for Oroville) by the coefficients matrix in Tables A-21 and A-22 (Oroville Coefficients Matrix worksheet).

Outputs of Worksheet: The values derived in this table are aggregated into fire, police, road, and other costs categories, as summarized in the Oroville Fiscal Impact Summary worksheet (Table A-26).

Data Sources: This worksheet relied on data supplied from other calculations provided by linked worksheets.

Links to Other Worksheets: This worksheet is backward-linked to the Calculated Economic-Fiscal Model Values worksheet (Table A-22) and Oroville Coefficients Matrix worksheet (Tables A-21 and A-22), and forward-linked to the Oroville Fiscal Impact Summary worksheet (Table A-26).

Table A-26. Oroville fiscal impact summary.
(Visitor simulation model)

Costs	Visitor-Driven	Indirect (growth-related)	Total
Fire protection	$78,544	$27,380	$105,924
Law enforcement	$24,545	$45,009	$69,554
Roads	$29,454	$22,320	$51,774
Other services and costs		$105,295	$105,295
TOTAL COSTS	**$132,543**	**$200,004**	**$332,547**
Revenues			
Sales tax		$299,029	$299,029
Property tax		$7,727	$7,727
Lodging tax		$29,486	$29,486
Other revenue		$96,251	$96,251
TOTAL REVENUES		**$432,492**	**$432,492**
REVENUES MINUS COSTS			**$99,945**

Source: Calculations produced by the Economic-Fiscal Model.

Description: Table A-26 shows a summary of fiscal impacts for the City of Oroville, based on an example visitor simulation model run.

Inputs to Worksheet: Values in this worksheet are calculated in Table A-23 (Oroville Visitor-Driven Translators and Impacts) and Tables A-24 and A-25 (Oroville Fiscal Impact Results). "Other costs" include all costs other than police, fire, and road costs. "Other revenue" combines all revenue sources other than sales, property, and lodging taxes.

Outputs of Worksheet: This worksheet is the final worksheet in the Oroville Fiscal Model.

Data Sources: The worksheet relied on data supplied from calculations generated by linked worksheets.

Links to Other Worksheets: This worksheet is backward-linked to the Oroville Visitor-Driven Translators and Impacts worksheet (Table A-23) and the Oroville Fiscal Impact Results worksheet (Tables A-24 and A-25).

A.2 FISCAL MODELS FOR CHICO, PARADISE, BIGGS, AND GRIDLEY

As discussed in detail in Section 4.0, "Methodology," of the main body of the report, the fiscal impact analyses conducted for Chico, Paradise, Biggs, and Gridley focused on visitor-driven impacts and relied on less-intensive estimation methods than the analyses conducted for Butte County and the City of Oroville. On the expenditure side, the analyses focused solely on estimating visitor-driven fire protection, law enforcement, and road maintenance costs. On the revenue side, the analyses focused solely on estimating sales tax and transient occupancy tax revenues generated by visitor spending. The fiscal impact models developed for these communities are therefore simpler and less comprehensive than those developed for Butte County and the City of Oroville.

Visitor-driven expenditure impacts on Chico, Paradise, Biggs, and Gridley were estimated by determining the percentage of total sales within each community attributable to spending by non-resident recreationists visiting the Oroville Facilities. This percentage was used as a proxy for the service demands placed on the communities by visitors who pass through en route to Oroville recreational facilities. For example, if visitor spending was estimated to account for 10 percent of Chico's total sales, then it was assumed that visitors accounted for 10 percent of Chico's annual police, fire, and road maintenance costs.

Visitor-driven revenue impacts for Chico, Paradise, Biggs, and Gridley were estimated using the same methods employed for estimating visitor-driven revenues for Butte County and Oroville. In essence, sales and transient occupancy tax revenues were estimated based on the change (direct and indirect) in taxable sales generated by visitor spending, as estimated by the Economic-Fiscal Model's economic component. Revenue-related tables for all jurisdictions are provided at the end of this section.

The tables in this section provide an example of model inputs and outputs associated with modeling the fiscal effects resulting from visitation to Lake Oroville. Sales (i.e., total industrial output [TIO]) levels and sales changes are expressed in the following tables in producer prices. (Producer prices must be inflated according to sector specific trade margins to derive purchaser prices.)

A.2.1 Chico Fiscal Model

Table A-27. Chico total sales and sales change.

Industrial Sector	Sales (TRO) ($1,000)	Sales Change ($1,000)
1 Agriculture	$104,950.2	$44.4
26 Agricultural, forestry, fishery	$12,184.6	$3.5
27 Landscape and horticultural ser	$9,964.2	$11.2
48 New construction	$189,451.8	$426.0
55 Maintenance construction	$62,026.1	$187.8
67 Canned fruits and vegetables	$66,584.1	$7.4
69 Pickles, sauces, and salad dressing	$1,207.6	$4.0
70 Frozen fruits, juices and vegetables	$999.5	$1.9
74 Rice milling	$13,945.2	$1.5
79 Bread, cake, and related product	$3,861.1	$11.3
80 Cookies and crackers	$21,225.4	$13.2
82 Confectionery products	$114.2	$0.4
85 Salted and roasted nuts and seeds	$6,062.6	$4.0
91 Malt beverages	$37,663.6	$28.5
103 Food preparations, N.E.C	$345.0	$0.8
108 Broad woven Fabric Mills And Fin	$602.4	$2.4
119 Coated fabrics, not rubberized	$301.9	$0.2
124 Apparel made from purchased mat	$27,543.0	$107.9
132 Fabricated textile products, N.	$2,185.4	$3.5
133 Logging camps and logging contractors	$991.8	$0.1
134 Sawmills and planing Mills, Gen	$1,055.0	$0.7
137 Millwork	$32,130.2	$5.8
138 Wood kitchen cabinets	$5,184.9	$3.2
140 Structural Wood Members, N.E.C	$972.3	$1.5
143 Mobile homes	$498.9	$2.2
144 Prefabricated wood buildings	$7,461.0	$1.4

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: (Note: the full worksheet is not shown; the entire worksheet is several pages long and includes 528 industrial sectors.) Table A-27 shows total sales (i.e., TIO in producer prices) and sales changes in Chico with the model running a visitor simulation. The sales change is the direct and indirect change in sales due to visitor purchases and reflects the portion of total economic activity in the model area that is linked to purchases by Lake Oroville visitors. As the following table (Table A-28) indicates, sales attributable to visitor spending accounts for less than one percent of total sales in Chico in this simulation.

Inputs to Worksheet: Inputs (sales and sales changes) to this worksheet are generated by the economic component of the Economic-Fiscal Model.

Outputs of Worksheet: This worksheet provides the data used to calculate the sales percentage attributable to visitor spending, which is used to estimate visitor-driven expenditure impacts.

Data Sources: This worksheet uses data supplied by the economic component of the Economic-Fiscal Model, including visitor spending estimates developed from data collected as part of the recreation user survey.

Links to Other Worksheets: This worksheet is backward-linked to the economic component (Chico Long Form worksheet) of the Economic-Fiscal Model and is forward linked to the Chico Visitor Sales Proportion worksheet (Table A-27).

Table A-28. Chico visitor sales percentage.

	Baseline Total	Visitors
Total sales (industrial output)	$3,273,677	$6,845
Visitor percent of total		0.21%

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: Table A-28 shows total sales for the Chico Baseline Model and for the visitor simulation. The total visitor sales impact is divided by total baseline sales to calculate the percentage of total sales attributable to visitor spending. Under this simulation, 0.21 percent of total sales in Chico is generated by visitor spending related to use of the Oroville Facilities.

Inputs to Worksheet: Inputs to this worksheet come from the Chico Total Sales and Sales Change worksheet (Table A-27).

Outputs of Worksheet: The percentage generated by this worksheet is used to estimate the expenditure impacts in the Chico Expenditure Impacts worksheet (Table A-29).

Data Sources: This worksheet relied on data in Table A-27.

Links to Other Worksheets: This worksheet is backward-linked to the Chico Total Sales and Sales Change worksheet (Table A-27) and forward-linked to the Chico Expenditure Impacts worksheet (Table A-29).

Table A-29. Chico expenditure impacts.

	Total Expenditures ($1,000)	Visitor-Driven Costs ($1,000)
Fire protection	$8,799.3	$18.4
Law enforcement	$13,532.6	$28.3
Road maintenance	$3,494.0	$7.3
TOTAL		**$54.0**

Source: City of Chico 2002, and calculations produced by the Economic-Fiscal Model.

Description: Table A-29 summarizes visitor-driven expenditure impacts on fire protection, law enforcement, and road maintenance in Chico under the visitor simulation.

Inputs to Worksheet: Inputs to this worksheet were generated by multiplying Chico's FY 2002-03 adopted budget expenditures for fire protection, police protection, and road maintenance by the visitor sales percentage in Table A-28. For example, the city's total fire protection budget of approximately $8.8 million was multiplied by the 0.21 percent to generate a visitor-related expenditure estimate of approximately $18,400.

Outputs of Worksheet: This worksheet supplies estimates of impacts on fire protection, police protection, and road maintenance costs.

Data Sources: Data sources include the City of Chico adopted FY 2002-03 budget and internal calculations generated by the model.

Links to Other Worksheets: The worksheet is backward-linked to the Chico Visitor Sales Percentage worksheet (Table A-28) and forward-linked to the Fiscal Impact Summary worksheet (not shown).

A.2.2 Paradise Fiscal Model

Table A-30. Paradise total sales and sales change.

Paradise Model Area	Sales ($1,000)	Sales Change ($1,000)
1 Agriculture	10,776.0276	35.8
26 Agricultural, forestry, fishery	3,346.0210	11.1
27 Landscape and horticultural ser	1,938.1409	6.4
48 New construction	36,850.4045	122.3
55 Maintenance contraction	22,049.9730	73.2
67 Canned fruits and vegetables	13,164.1921	43.7
103 Food preparations, N.E.C	68.2185	0.2
133 Logging camps and logging contractors	1,774.8084	5.9
134 Sawmills and planing mills, gen	1,582.4710	5.3
157 Wood partitions and fixtures	297.3602	1.0
179 Commercial printing	5,917.7180	19.6
243 Concrete products, N.E.C	133.7755	0.4
244 Ready-mixed concrete	1812.1795	6.0
373 Radio and TV communication equipment	1,564.5604	5.2
435 Motor freight transport and war	1,746.2626	5.8
441 Communications, except radio an	3,099.6163	10.3
443 Electric services	3,500.2921	11.6
444 Gas production and distribution	5,821.7763	19.3
445 Water supply and sewerage systems	2,047.7795	6.8
447 Wholesale trade	3,263.5729	10.8
448 Building materials and gardening	9,416.3703	31.2
449 General merchandise stores	2,889.4113	9.6
450 Food stores	26,609.5411	88.3
451 Automotive dealers and service stations	6,459.7386	21.4
452 Apparel and accessory stores	268.4776	0.9
453 Furniture and home furnishings stores	1,292.9324	4.3
454 Eating and drinking	18,318.4433	60.8
455 Miscellaneous retail	10,787.1522	35.8
456 Banking	24,553.6246	81.5
457 Credit agencies	196.8698	0.7
458 Security and commodity brokers	2,132.7966	7.1
459 Insurance carriers	5,271.4968	17.5
460 Insurance agents and brokers	1,102.9770	3.7
462 Real estate	10,971.4551	36.4
463 Hotels and lodging places	850.8989	2.8
464 Laundry, cleaning and shoe repair	231.5034	0.8
466 Beauty and barber shops	687.0002	2.3
467 Funeral service and crematories	1202.7816	4.0
470 Other business services	293.5390	1.0
471 Photofinishing, commercial photography	1102.2687	3.7
472 Services to buildings	3069.6655	10.2
473 Equipment rental and leasing	1447.5474	4.8
474 Personnel supply services	5932.7377	19.7

Table A-30. Paradise total sales and sales change.

Paradise Model Area	Sales ($1,000)	Sales Change ($1,000)
478 Automobile parking and car wash	159.6734	0.5
479 Automobile repair and services	9,229.4290	30.6
480 Electrical repair service	105.8272	0.4
482 Miscellaneous repair shops	477.5029	1.6
483 Motion pictures	995.1990	3.3
485 Bowling alleys and pool halls	443.0766	1.5
488 Amusement and recreation services	1,001.5913	3.3
489 Membership sports and recreation	197.4827	0.7
490 Doctors and dentists	14,410.4276	47.8
491 Nursing and protective care	9,757.9948	32.4
492 Hospitals	52,806.4161	175.2
493 Other medical and health services	11,795.4819	39.1
494 Legal services	1,048.6108	3.5
495 Elementary and secondary school	1,527.2383	5.1
497 Other educational services	2,836.9496	9.4
499 Child day care services	809.6255	2.7
500 Social services, N.E.C.	8,061.3246	26.7
501 Residential care	5,552.9397	18.4
502 Other nonprofit organizations	5,494.6471	18.2
503 Business associations	245.0283	0.8
505 Religious organizations	5,172.5866	17.2
506 Engineering, architectural services	887.0278	2.9
507 Accounting, auditing and bookkeeping	3,570.5148	11.8
508 Management and consulting services	767.3297	2.5
512 Other state and local govt. Enterprises	13,011.5180	43.2
513 U.S. Postal Service	4,901.9851	16.3
Local government	72,344.9420	240.1
State government	1872	6.2
Federal government	5,106.78	16.9
Total Industrial Output	**$49,0435.5384**	**$1,627.4**

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: Table A-30 shows total sales (i.e., TIO in producer prices) and sales changes in Paradise with the model running a visitor simulation. The sales change is the direct and indirect change in sales due to visitor purchases and reflects the portion of total economic activity in the model area that is linked to purchases by Lake Oroville visitors. As the following table (Table A-31) indicates, sales attributable to visitor spending accounts for less than one percent of total sales in Paradise in this simulation.

Inputs to Worksheet: Inputs (sales and sales changes) to this worksheet are generated by the economic component of the Economic-Fiscal Model.

Outputs of Worksheet: This worksheet provides the data used to calculate the sales percentage attributable to visitor spending, which is used to estimate visitor-driven expenditure impacts.

Data Sources: This worksheet uses data supplied by the economic component of the Economic-Fiscal Model, including visitor spending estimates developed from data collected as part of the recreation user survey.

Links to Other Worksheets: This worksheet is backward-linked to the economic component (Paradise Long Form worksheet) of the Economic-Fiscal Model and is forward-linked to the Paradise Visitor Sales Proportion worksheet (Table A-31).

Table A-31. Paradise visitor sales percentage.

	Total Industrial Output	Visitor Impact
Total sales (industrial output)	$490,435,400	$1,627,628
Oroville project percent of sales (TIO)		0.33%

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: Table A-31 shows total sales for the Paradise Baseline Model and for the visitor simulation. The total visitor sales impact is divided by total baseline sales to calculate the percentage of total sales attributable to visitor spending. Under this simulation 0.3 percent of total sales in Paradise is generated by visitor spending related to use of Oroville Facilities.

Inputs to Worksheet: Inputs to this worksheet come from the Paradise Total Sales and Sales Change worksheet (Table A-30).

Outputs of Worksheet: This percentage generated by this worksheet is used to estimate the expenditure impacts in the Paradise Expenditure Impacts worksheet (Table A-32).

Data Sources: This worksheet relied on data in Table A-30.

Links to Other Worksheets: This worksheet is backward-linked to the Paradise Total Sales and Sales Change worksheet (Table A-30) and forward-linked to the Paradise Expenditure Impacts worksheet (Table A-32).

Table A-32. Paradise expenditure impacts.

	BUDGETED COSTS	VISITOR-DRIVEN COSTS
Fire protection	$2,762,000	$9,166
Law enforcement	$3,184,000	$10,567
Road maintenance	$1,019,500	$3,383
TOTAL		**$23,117**

Source: Town of Paradise 2002, and calculations produced by the Economic-Fiscal Model.

Description: This worksheet summarizes visitor-driven expenditure impacts on fire protection, law enforcement, and road maintenance in Paradise under the visitor simulation.

Inputs to Worksheet: Inputs to this worksheet were generated by multiplying Paradise's FY 2002-03 adopted budget expenditures for fire protection, police protection, and road maintenance by the visitor sales percentage in Table A-31. For example, the city's total fire protection budget of approximately $2.8 million was multiplied by the 0.33 sales percentage to generate a visitor-related expenditure estimate of approximately $9,200.

Outputs of Worksheet: This worksheet supplies estimates of impacts on fire protection, police protection, and road maintenance costs.

Data Sources: Data sources include the City of Paradise adopted FY 2002-03 budget and internal calculations generated by the model.

Links to Other Worksheets: The worksheet is backward-linked to the Paradise Visitor Sales Percentage worksheet (Table A-31) and forward-linked to the Fiscal Impact Summary worksheet (not shown).

A.2.3 Biggs-Gridley Fiscal Model

Table A-33. Biggs-Gridley total sales and sales change.

BIGGS-GRIDLEY MODEL AREA	SALES ($1,000)	SALES CHANGE ($1,000)
1 Agriculture	96,868.762	$2.187
26 Agricultural, forestry, fishery	19,255.404	$0.161
27 Landscape and horticultural services	178.357	$0.114
31 Gold ores	495.957	$0.001
48 New construction	3,391.142	$0.777
55 Maintenance contraction	$3,282.248	$0.613
68 Dehydrated food products	$3,850.074	$0.068
69 Pickles, sauces, and salad dressing	$515.566	$0.257
103 Food preparations, N.E.C	$147.312	$0.175
157 Wood partitions and fixtures	$297.360	$0.028
174 Newspapers	$1,288.639	$1.209
179 Commercial printing	$736.474	$0.874
210 Petroleum refining	$11,970.156	$3.587
309 Farm machinery and equipment	$1,647.363	$0.043
421 Sporting and athletic goods, N.	$1,006.333	$0.221
435 Motor freight transport and war	$8,382.061	$3.187
439 Arrangement of passenger transportation	$170.682	$0.091
443 Electric services	$6,397.086	$5.506
445 Water supply and sewerage systems	$413.087	$0.590
447 Wholesale trade	$10,270.656	$8.274
448 Building materials and gardening	$2,872.175	$1.437
450 Food stores	$5,199.022	$120.311
451 Automotive dealers and service stations	$6,002.412	$77.886
452 Apparel and accessory stores	$55.933	$14.992
453 Furniture and home furnishings stores	$190.137	$0.254
454 Eating and drinking	$5,988.972	$50.494
455 Miscellaneous retail	$1,957.084	$15.620
456 Banking	$4,680.535	$7.127
457 Credit agencies	$275.618	$0.254
459 Insurance carriers	$727.103	$0.946
460 Insurance agents and brokers	$152.135	$0.041
462 Real estate	$357.376	$0.474
463 Hotels and lodging places	$290.079	$0.208
470 Other business services	$371.816	$9.581
471 Photofinishing, commercial photography	$551.134	$0.815
472 Services to buildings	$139.530	$0.196

Table A-33. Biggs-Gridley total sales and sales change.

BIGGS-GRIDLEY MODEL AREA	SALES ($1,000)	SALES CHANGE ($1,000)
473 Equipment rental and leasing	$419.789	$0.460
476 Detective and protective services	$45.546	$0.086
478 Automobile parking and car wash	$175.465	$1.994
479 Automobile repair and services	$2,759.314	$2.276
480 Electrical repair service	$158.741	$0.253
483 Motion pictures	$514.758	$0.481
488 Amusement and recreation services	$268.946	$2.050
490 Doctors and dentists	$5,640.543	$7.561
491 Nursing and protective care	$2,065.184	$2.043
492 Hospitals	$12,294.489	$11.672
493 Other medical and health services	$2,456.219	$2.974
494 Legal services	$333.649	$0.503
498 Job trainings and related service	$1,037.389	$0.316
499 Child day care services	$1,308.710	$0.895
501 Residential care	$1,012.660	$0.777
503 Business associations	$245.028	$0.371
505 Religious organizations	$835.683	$1.118
506 Engineering, architectural services	$177.406	$0.033
507 Accounting, auditing and bookkeeping	$736.189	$1.051
512 Other state and local government services	$4,823.235	$0.000
513 U.S. Postal Service	$1,817.115	$0.000
Local government	$3,240.000	$4.026
State government	$360.000	$41.143
Federal government	$292.683	$0.000
TOTAL	**$243,394.522**	**$410.680**

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: Table A-33 shows total sales (i.e., TIO in producer prices) and sales changes in the Biggs-Gridley model area with the model running a visitor simulation. The sales change is the direct and indirect change in sales due to visitor purchases and reflects the portion of total economic activity in the model area that is linked to purchases by Lake Oroville visitors. As the following table (Table A-34) indicates, sales attributable to visitor spending accounts for less than one percent of total sales in Biggs-Gridley in this simulation.

Inputs to Worksheet: Inputs (sales and sales changes) to this worksheet are generated by the economic component of the Economic-Fiscal Model.

Outputs of Worksheet: This worksheet provides the data used to calculate the sales percentage attributable to visitor spending, which is used to estimate visitor-driven expenditure impacts.

Data Sources: This worksheet uses data supplied by the economic component of the Economic-Fiscal Model, including visitor spending estimates developed from data collected as part of the recreation user survey.

Links to Other Worksheets: This worksheet is backward-linked to the economic component (Biggs-Gridley Long Form worksheet) of the Economic-Fiscal Model and is forward-linked to the Biggs-Gridley Visitor Sales Proportion worksheet (Table A-34).

Table A-34. Biggs-Gridley visitor sales percentage.

	TIO ($1,000)	Visitor Sales Impact ($1,000)
Sales (industrial output)	$243,394.5	$410.7
Oroville Project percent of sales (TIO)		0.169%

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: Table A-34 shows total sales for the Biggs-Gridley Baseline Model and for the visitor simulation. The total visitor sales impact is divided by total baseline sales to calculate the percentage of total sales attributable to visitor spending. Under this simulation, 0.17 percent of total sales in the Biggs-Gridley model area is generated by visitor spending related to use of Oroville Facilities.

Inputs to Worksheet: Inputs to this worksheet come from the Biggs-Gridley Total Sales and Sales Change worksheet (Table A-33).

Outputs of Worksheet: This percentage generated by this worksheet is used to estimate the expenditure impacts in the Biggs-Gridley Expenditure Impacts worksheet (Table A-35).

Data Sources: This worksheet relied on data in Table A-33.

Links to Other Worksheets: This worksheet is backward-linked to the Biggs-Gridley Total Sales and Sales Change worksheet (Table A-33) and forward-linked to the Biggs-Gridley Expenditure Impacts worksheet (Table A-35).

Table A-35. Biggs and Gridley expenditure impacts.

City of Biggs	Budgeted Expenditures	Visitor-Driven Costs
Fire protection	$8,000	$13
Law enforcement	$160,186	$270
Road maintenance	$48,863	$82
TOTAL		**$366**
City of Gridley	**Budgeted Expenditures**	**Direct Costs**
Fire protection	$440,318	$743
Law enforcement	$1,704,726	$2,876
Road maintenance	$288,009	$486
TOTAL		**$4,105**

Source: City of Biggs 2002, City of Gridley 2002, and calculations produced by the Economic-Fiscal Model.

Description: This worksheet summarizes visitor-driven expenditure impacts on fire protection, law enforcement, and road maintenance in Biggs and Gridley under the visitor simulation.

Inputs to Worksheet: Inputs to this worksheet were generated by multiplying Biggs and Gridley's FY 2002-03 adopted budget expenditures for fire protection, police protection, and road maintenance by the visitor sales percentage in Table A-34. For example, Gridley's total fire protection budget of approximately $440,300 was multiplied by the 0.17 sales percentage to generate a visitor-related expenditure estimate of approximately $740.

Outputs of Worksheet: This worksheet supplies estimates of impacts on fire protection, police protection, and road maintenance costs.

Data Sources: Data sources include the City of Paradise adopted FY 2002-03 budget and the City of Biggs adopted FY 2002-03 budget, and internal calculations generated by the model.

Links to Other Worksheets: The worksheet is backward-linked to the Biggs-Gridley Visitor Sales Percentage worksheet (Table A-34) and forward-linked to the Fiscal Impact Summary worksheet (not shown).

A.3 MODEL CALCULATIONS FOR ESTIMATING SALES TAX, TRANSIENT OCCUPANCY TAX, AND PROPERTY TAX REVENUES

This section provides an example of how the Economic-Fiscal Model was used to estimate visitor-driven revenues (i.e., sales tax and lodging tax revenues) for all jurisdictions and earnings-driven revenues (i.e., property tax revenue) for Oroville and Butte County. Model calculations for indirect (growth-related) revenues for Oroville and Butte County were previously described in Section A.1, "Fiscal Models for Butte County and the City of Oroville." (Indirect revenues were not estimated for Biggs, Chico, Gridley, and Paradise.)

A.3.1 Sales Tax Revenue

Table A-36. Sales tax revenue calculations.

Industrial Sector	Purchaser Prices ($1,000)	Taxable Portion	Taxable Sales ($1,000)	Tax Rate	Sales Tax Revenue ($1,000)
448 Building materials and gardening supplies	$136,119	100.00%	$136,119.3	1.0%	$1,361.2
449 General merchandise stores	$226,892	100.00%	$226,891.8	1.0%	$2,268.9
450 Food stores	$620,763	5.00%	$50,157.7	1.0%	$501.6
451 Automotive dealers and service stations	$560,768	75.00%	$420,576.2	1.0%	$4,205.8
452 Apparel and accessory stores	$50,351	100.00%	$50,350.8	1.0%	$503.5
453 Furniture and home furnishings	$100,487	100.00%	$100,487.5	1.0%	$1,004.9
454 Eating and drinking	$121,329	100.00%	$121,328.8	1.0%	$1,213.3
455 Miscellaneous retail	$240,032	100.00%	$240,031.9	1.0%	$2,400.3
TOTAL	$2,056,741		$1,345,943.8		$13,459.4

Source: Calculations produced by the Economic-Fiscal Model.

Description: This simplified worksheet, which shows an example for Chico, is used to estimate sales tax revenue for all jurisdictions. The worksheet multiplies producer prices by the portion of sales subject to sales tax to generate taxable sales. Estimated taxable sales are then multiplied by the local portion of the sales tax rate to produce an estimate of sales tax revenue.

Inputs to Worksheet: Inputs to this worksheet include estimates of sales generated by the economic component of the Economic-Fiscal Model, estimates of the taxable percentage of sales, and the local sales tax rate.

Outputs of Worksheet: The output of this worksheet is estimates of sales tax revenues generated by purchases of visitors to Oroville Facilities.

Data Sources: Except for sales tax rates, data in this worksheet are produced by internal model calculations.

Links to Other Worksheets: This worksheet is backward-linked to the economic component of the Economic-Fiscal Model and is forward-linked to the Fiscal Report worksheet (not shown).

A.3.2 Lodging Tax Revenue

Table A-37. Lodging tax revenue calculations.

Lodging Tax Revenue Sector	Total Sales ($1,000)	Sales Change ($1,000)	Tax Rate	Total Revenue ($1,000)	Change in Revenue ($1,000)
Oroville					
463 Hotels and lodging places	$3,352	$315	9%	$302	$28
Chico					
463 Hotels and lodging places	$11,062	$28	10%	$1,106	$3
Paradise					
463 Hotels and lodging places	$851	$8	6%	$51	$0
Gridley					
463 Hotels and lodging places	$290	$0	6%	$17	$0
Butte Co Unincorporated					
463 Hotels and lodging places	$630	$14	6%	$0	$1

Source: Calculations produced by the Economic-Fiscal Model.

Description: This worksheet is used to calculate lodging tax revenues for all jurisdictions. Estimated sales in the hotel and lodging places sector generated by visitors to Oroville Facilities are multiplied by prevailing local transient occupancy tax rates to produce revenue estimates.

Inputs to Worksheet: Inputs to the worksheet include prevailing local transient occupancy tax rates and sales generated by visitors to Oroville Facilities. Sales estimates in the worksheet are generated by the economic component of the Economic-Fiscal Model, which is driven by estimated sales to visitors.

Outputs of Worksheet: The worksheet provides estimates of transient occupancy tax revenues generated by sales to visitors.

Data Sources: Prevailing transient occupancy tax rates were compiled from information provided by each jurisdiction. Sales estimates were generated by the economic component of the Economic-Fiscal Model, which used estimates of visitation and expenditures derived from the recreation user survey as inputs.

Links to Other Worksheets: The worksheet is backward-linked to the Long Form worksheets for Oroville, Chico, Paradise, Biggs, and Short Form worksheet for Butte County (not shown). The worksheet is forward-linked to the Fiscal Report worksheet (not shown).

A.3.3 Property Tax Revenue

Table A-38. Property tax revenue calculations.

Jurisdiction	Earnings ($1,000)	Earnings Change ($1,000)	Earnings/Revenue Coefficient	Property Tax Revenue ($1,000)	Property Tax Revenue Change ($1,000)
Butte County	$2,080,835	$11,026	0.006695545	$13,932	$74
Butte Unincorporated	$865,543	$6,534		$4,583	$24
Butte Incorporated	$1,215,292	$4,492		$6,121	$31
Greater Oroville	$379,573	$7,000	0.004068296	$1,544	$28
Oroville City	$101,871	$1,879	0.004068296	$414	$14
Unincorporated Oroville	$277,703	$5,121	0.004068296	$1,130	$15
Greater Chico	$1,389,491	$3,015	0.002726844	$3,789	$8
Chico City	$931,576	$2,021	0.002726844	$2,540	$6
Unincorporated Chico	$457,915	$994	0.002726844	$1,249	$2
Greater Paradise	$229,891	$807	0.020828918	$4,788	$17
Paradise City	$136,473	$479	0.020828918	$2,843	$10
Unincorporated Paradise	$93,418	$328	0.020828918	$1,946	$7
Greater Biggs-Gridley	$81,879	$203	0.00615	$504	$1
Greater Biggs	$21,157	$53	0.005853251	$124	$0
Biggs City	$11,158	$28	0.005853251	$65	$0
Unincorporated Biggs	$9,999	$25	0.005853251	$59	$0
Greater Gridley	$60,722	$151	0.007540105	$458	$1
Gridley City	$34,214	$85	0.007540105	$258	$1
Unincorporated Gridley	$26,508	$66	0.007540105	$200	$0

Source: Baseline Economic-Fiscal Model data (Minnesota IMPLAN Group 2002), and calculations produced by the Economic-Fiscal Model.

Description: This worksheet computes changes in property tax revenues for the incorporated and unincorporated areas of Butte County. Baseline earnings and earnings changes are generated by the economic component of the Economic-Fiscal Model. An earning/revenue coefficient was developed by dividing earnings by total property tax collections for each jurisdiction, as reported by the California Department of Finance. The "Property Tax Revenue" column was used to calibrate the model and as a diagnostic for testing the model. The "Property Tax Revenue Change" column calculates the change in revenue associated with any given change in final demand input to the economic component of the Economic-Fiscal Model.

Inputs to Worksheet: The worksheet relies on property tax revenue data supplied by the California Department of Finance and earnings data generated by the economic component of the Economic-Fiscal Model.

Outputs of Worksheet: The model produces estimates of property tax revenue changes for incorporated and unincorporated areas of Butte County.

Links to Other Worksheets: The worksheet is backward-linked to the Long Form worksheets for Oroville, Chico, Paradise, and Biggs and the Short Form worksheet for

Butte County (not shown). The worksheet is forward-linked to the Fiscal Report worksheet (not shown).

Links to Other Worksheets: This worksheet is linked to the Fiscal Reports and Fiscal Results Worksheet.

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